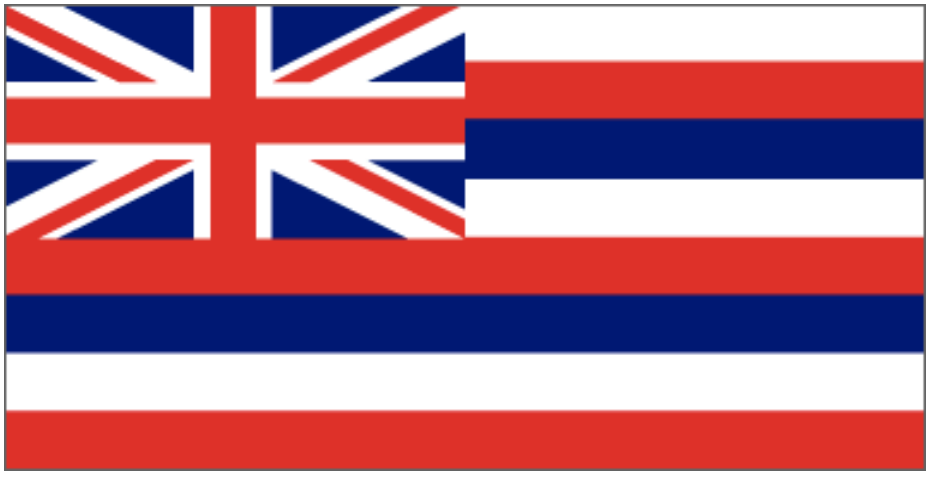
FY2005

Combined Army Facilities - Hawaii

Installation Action Plans

Fort Shafter
Kunia Military Reservation
Schofield Barracks
Tripler Army Medical Center
Wheeler Army Airfield



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Printed February 2004

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year restoration program for an installation. The plan will define all Installation Restoration Program (IRP) requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at each Solid Waste Management Unit (SWMU) at the installation and other areas of concern.

In an effort to coordinate planning information between the IRP manager, installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for the combined Army Facilities in Hawaii. The IAP is used to track requirements, schedules and tentative budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change during the document's annual review.

Contributors

The following agencies contributed to the formulation and completion of these Installation Action Plans:

Engineering and Environment, Inc.

Dept. of Public Works, Environmental Division, Hawaii Command

Hawaii Department of Health

Pacific Regional Office -IMA

PPC - AEC Support - Price-Based Contracting

US Corps of Engineers, Honolulu District

US Army Reserves for US Army Environmental Center

Acronyms & Abbreviations

AEC	(United States) Army Environmental Center (formally called USATHMA)
AEDB-R	Army Environmental Database - Restoration
AIT	Advanced Individual Training
ANCOC	Advanced Noncommissioned Officer Course
AR	Administrative Record
AST	Aboveground Storage Tank
ATSDR	Agency for Toxic Substance Disease Registry
BCT	Basin Combat Training
BNCOC	Basic Noncommissioned Officer Course
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CAP	Corrective Action Plan
CDTF	Chemical Defense Training Facility
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (1980)
CFC	Chloroflourocarbon
CPT	Cone Penetrometer Technology
CTC	Cost-to-Complete
cy	cubic yards
DCE	Dichloroethene
DERP	Defense Environmental Restoration Program (now called ER,A)
DNT	Di Nitro Toluene
DOH	Department of Health
DOL	Directorate of Logistics
DPW	Directorate of Public Works
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System (now called AEDB-R)
EPA	(United States) Environmental Protection Agency
ER,A	Environmental Restoration, Army (formally called DERA)
FFA	Federal Facility Agreement
FRA	Final Remedial Action
FS	Feasibility Study
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
gal	gallon
IAP	Installation Action Plan
IR	Information Repository
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ITR	Independent Technical Review
K	$1,000
kVA	Kilo Volts x Amps
LEL	Lower Explosive Limit
LTM	Long-term Monitoring
LTO	Long-term Operation
LUC	Land Use Controls
MCL	Maximum Contaminant Level
MSL	mean sea level
NCO	Noncommissioned Officer
NE	Not Evaluated
NFA	No Further Action
NFRAP	No Further Remedial Action Plan

Acronyms & Abbreviations

NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OB/OD	Open Burning / Open Detonation
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyl
PCE	type of chlorinated solvent
PCP	pentachlorophenol
PLDC	Primary Leadership Development Course
POL	Petroleum, Oil & Lubricants
POM	Program Objective Memorandum (budget)
RA	Remedial Action
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSC	Reserve Support Command
SCR	Site Characterization Report
SI	Site Inspection
STP	Sewage Treatment Plant
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TCA	Trichloroethane
TCE	Tro Chloro Ethylene
TNT	Tri Nitro Toluene
TRC	Technical Review Committee
USACE	United States Army Corps of Engineers
USAEHA	United States Army Environmental Hygiene Agency (now called CHPPM)
USATHMA	United States Army Toxic and Hazardous Material Agency (now called AEC)
USGS	United State Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
yr	year

Fort Shafter Summary

STATUS:

Non-NPL, no RCRA Part B Permit

NUMBER OF AEDB-R SITES:

Total of AEDB-R Sites: 46
Active AEDB-R Sites: 7
Response Complete AEDB-R Sites: 39
MR Sites: 3

DIFFERENT AEDB-R SITE TYPES:

7 Contaminated Buildings	5 Contaminated Groundwater
1 Contaminated Sediments	1 Landfill
1 Pesticide Shop	1 Surface Runoff
1 Washrack	4 Storage Areas
1 Plating Shop	11 Spill Site Areas
4 Underground Tank Farms	5 USTs
2 Waste Lines	2 Soil Contamination after Tank Removal

CONTAMINANTS OF CONCERN:

Petroleum/Oil/Lubricants, Pesticides, Sovents

MEDIA OF CONCERN:

Groundwater, Soil

COMPLETED REM/IRA/RA:

REM - Underground Storage Tank Removal
REM - Underground Storage Tanks Removal

CURRENT IRP PHASES:

RI/FS: 7 Sites RA: 1 Site RD: 1 Site LTM: 6 Sites

PROJECTED IRP PHASES:

RA(O): 1 Site RA: 1 Site LTM: 7 Sites

IDENTIFIED POSSIBLE REM/IRA/RA:

RA at FTSHF-46

DURATION:

Year of IRP Inception	1991
Year of RA Completion	2005
Year of IRP Completion (excluding LTM)	2010

Kunia M.R.Summary

STATUS:	Non-NPL, no RCRA Part B Permit
NUMBER OF AEDB-R SITES:	Total of AEDB-R Sites: 3 Active AEDB-R Sites: 1 Response Complete AEDB-R Sites: 2
DIFFERENT AEDB-R SITE TYPES:	1 Maintenance Yard 1 Spill Site Area 1 Soil Contamination after Tank Removal
CONTAMINANTS OF CONCERN:	Petroleum/Oil/Lubricants
MEDIA OF CONCERN:	Groundwater, Surface Water, Soil
COMPLETED REM/IRA/RA:	UST removal IRA at 1 site
CURRENT IRP PHASES:	RA at FSK-01
PROJECTED IRP PHASES:	None
IDENTIFIED POSSIBLE REM/IRA/RA:	None
DURATION:	Year of IRP Inception 1991 Year of RA Completion 2005 Year of IRP Completion (excluding LTM) 2005

Schofield Barracks Summary

STATUS:

NPL; HRS of 28.9

NUMBER OF AEDB-R SITES:

Total of AEDB-R Sites: 125
Active AEDB-R Sites: 2
Response Complete AEDB-R Sites: 123
MR Sites: 10

DIFFERENT AEDB-R SITE TYPES:

2 Burn Areas	3 Unexploded Munitions/Ordnance
1 Contaminated Groundwater	4 Surface Disposal Areas
10 Disposal Pits/Dry Wells	2 Landfills
17 Maintenance Yards	29 Storage Areas
36 Spill Site Areas	1 Aboveground Storage Tank
5 Underground Tank Farms	3 USTs
3 Waste Treatment Plants	9 Other

CONTAMINANTS OF CONCERN:

Petroleum/Oil/Lubricants, Trichloroethylene

MEDIA OF CONCERN:

Groundwater, Soil

COMPLETED REM/IRA/RA:

- Removal Action - UST/Soil Removal, 1993
- RA - Del Monte Water Supply Treatment System, 1997
- RA - Cap Repair/Maintenance for OU4, 1999

CURRENT IRP PHASES:

LTM: 2 sites

PROJECTED IRP PHASES:

LTM: 2 sites

IDENTIFIED POSSIBLE REM/IRA/RA:

- Wellhead Treatment fot OU2 Final Remedial Action

DURATION:

Year of IRP Inception	1991
Year of RA Completion	1998
Year of IRP Completion (excluding LTM)	2015+

Tripler Army M.C. Summary

STATUS:	Non-NPL, no RCRA Part B Permit
NUMBER OF AEDB-R SITES:	Total of AEDB-R Sites: 8 Active AEDB-R Sites: 2 Response Complete AEDB-R Sites: 6
DIFFERENT AEDB-R SITE TYPES:	4 Underground Storage Tanks — 1 Landfill 1 Contaminated Sediment — 1 Storage Area 1 Soil Contamination after Tank Removal
CONTAMINANTS OF CONCERN:	Petroleum/Oil/Lubricants, Pesticides, Sovents
MEDIA OF CONCERN:	Groundwater, Surface Water, Soil
COMPLETED REM/IRA/RA:	REM - Underground Storage Tank Removal (FY93-94) REM - Pesticide Storage Area (FY93-94-95-96) REM - PCB Transformer Station (FY93-94-95)
CURRENT IRP PHASES:	LTM: 1 site RI/FS: 1 site
PROJECTED IRP PHASES:	RD: 1 site RA(C): 1 site LTM: 2 sites
IDENTIFIED POSSIBLE REM/IRA/RA:	RA at 1 site
DURATION:	Year of IRP Inception — 1991 Year of RA Completion — 2009 Year of IRP Completion (excluding LTM) — 2009

Wheeler A.A.F. Summary

STATUS:	Non-NPL, no RCRA-Part B permit
NUMBER OF AEDB-R SITES:	20 AEDB-R Sites 2 Active sites 18 Response Complete
DIFFERENT AEDB-R SITE TYPES:	4 Underground Tank Farms 9 Underground Storage Tanks 1 Contaminated Soil Piles 2 Spill Site Areas
CONTAMINANTS OF CONCERN:	POL, PCBs
MEDIA OF CONCERN:	Soil
COMPLETED REM/IRA/RA:	none
CURRENT IRP PHASES:	PA/SI: 1 site RI: 1 site
PROJECTED IRP PHASES:	None
IDENTIFIED POSSIBLE REM/IRA/RA:	None
DURATION:	Year of IRP Inception 2001 Year of RA Completion 2005 Year of IRP Completion 2005

Fort Shafter Installation Information

LOCALE:

The Fort Shafter Military Reservation is located 3 miles northwest of downtown Honolulu on the island of Oahu, State of Hawaii. This military reservation covers an area of 1,341 acres that varies in elevation from sea level to 400 feet. It is located in the Kahauiki Valley on the southwestern side of the Koolau Mountain Range. The sub-installation is divided into two areas by the H-1 highway; the Flats and the Main Post.

COMMAND ORGANIZATION:

Major Command: U.S. Army, Pacific (USARPAC)
Subcommand: U.S. Army Garrison, Hawaii (USAG-HI)
Sub-installation: Fort Shafter Military Reservation

IRP EXECUTING AGENCIES:

Investigative Phase Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii
Remedial Design/Action Phase Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii
.

REGULATORY PARTICIPATION:

Federal: U.S. Environmental Protection Agency, Region IX
State: State of Hawaii, Department of Health

REGULATORY STATUS:

Non-NPL, potential off-post contamination
Technical Review Committee: None
RCRA Permit: None
Interagency Agreement: None

MAJOR CHANGES TO IAP FROM THE PREVIOUS YEAR:

Remedial Investigation Phases I and II completed at Fort Shafter Flats, as well as Risk Assessment conducted.

Kunia M.R. Installation Information

LOCALE:

The Kunia Military Reservation is located on the Schofield Plateau, approximately 850 feet above sea level on the island of Oahu. The facility is situated on Kunia Road, near State Highway 750, approximately twenty miles northwest of the city of Honolulu. Agricultural lands (pineapple fields) operated by Del Monte Fresh Produce (Hawaii) Incorporated surrounds the installation to the west, south and north. The town of Kunia is approximately 1 mile to the south of the installation. Schofield Barracks is immediately to the north and Wheeler Army Airfield across Kunia Road to the east.

COMMAND ORGANIZATION:

Major Command: U.S. Army, Pacific (USARPAC)
Subcommand: U.S. Army Garrison, Hawaii (USAG-HI)
Installation: Kunia Military Reservation

IRP EXECUTING AGENCIES:

Investigative Phase Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii
Remedial Phase Design/Action Phase Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii

REGULATORY PARTICIPATION:

Federal: U.S. Environmental Protection Agency, Region IX
State: State of Hawaii, Department of Health

REGULATORY STATUS:

Non-NPL, potential off post migration of contamination
Technical Review Committee/Restoration Advisory Board Status: None
RCRA Permit: None
Interagency Agreement: None

MAJOR CHANGES TO IAP FROM THE PREVIOUS YEAR:

Cap installation to be completed in FY04

Schofield Barracks Installation Information

LOCALE:

Schofield Barracks covers 17,725 acres in the north-central plateau of the island of Oahu, Hawaii (Figure 1). The facility is divided into two areas; the Eat Range and the Main Post. The facility lies approximately 22 miles northwest of the city of Honolulu. The area around the barracks is mostly agricultural land. The nearest municipality is Wahiawa, bordering the East Range to the north, supporting residential, commercial and light industrial uses. The town of Mililani lies approximately 2.5 miles southeast of Schofield Barracks and is mostly residential and commercial use. Wheeler Army Airfield lies between and south of the Main Post and East Range areas.

COMMAND ORGANIZATION:

Major Command: U.S. Army, Pacific (USARPAC)
— Subcommand: U.S. Army Garrison, Hawaii (USAG-HI)
— Sub-installation: Schofield Barracks

IRP EXECUTING AGENCIES:

— Investigation Phase Executing Agency: U.S. Army Environmental Center, Restoration and Program Management Division
— Remedial Design Executing Agency: U.S. Army Environmental Center, Restoration and Program Management Division
— Remedial Action Phase Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division
.

REGULATORY PARTICIPATION:

— Federal: U.S. Environmental Protection Agency, Region IX
— State: Hawaii Department of Health

REGULATORY STATUS:

— NPL Installation, September 1990
— Federal Facility Agreement, September 1991
— Technical Review Committee, December 1993
— Removed from NPL, August 2000
— Five Year Review, March 2002

MAJOR CHANGES TO IAP FROM THE PREVIOUS YEAR:

-- Landfill cap regrading completed in FY04.
-- Cap monitoring/quarterly inspections at OU-4 (Landfill) on-going.
-- Groundwater monitoring at OU-2 and OU-4 on-going.

Tripler Army M.C. Installation Information

LOCALE:

The Tripler Army Medical Center (TAMC) is located 4.5 miles northwest of downtown Honolulu on the island of Oahu, State of Hawaii (Figure 1). The military-operated hospital and support facilities cover an area of 367 acres that varies in elevation from 190 to 665 feet. It is located on the southwestern end of the Koolau Mountain Range on moderate sloping land between Moanalua and Kamananui Streams.

COMMAND ORGANIZATION:

Major Command: U.S. Army Health Services Command
U.S. Army, Pacific (USARPAC)
Subcommand: U.S. Army Garrison, Hawaii
Installation: Tripler Army Medical Center

IRP EXECUTING AGENCIES:

Investigative Phase Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii
Remedial Design/Action Phase Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii

REGULATORY PARTICIPATION:

.
Federal: U.S. Environmental Protection Agency, Region IX
State: State of Hawaii, Department of Health

REGULATORY STATUS:

Non-NPL, potential off-post contamination
Technical Review Committee: None
RCRA Permit: None
Interagency Agreement: None

MAJOR CHANGES TO IAP FROM THE PREVIOUS YEAR:

Additional RI field work pending removal of concrete barriers from site for UST Bldg 125 (TAMC-04).

Wheeler A.A.F. Installation Information

SITE DESCRIPTION:

Wheeler Army Airfield (WAAF) is located in the central part of the island of Oahu on the Schofield Plateau and covers approximately 1,430 acres of land (Figure 1). The facility lies approximately 22 miles northwest of the city of Honolulu. The area around the airfield is mostly agricultural land. The nearest municipality is Wahiawa, located approximately 0.5 mile to the northeast supporting residential, commercial and light industrial uses. The town of Mililani lies approximately 2 miles southeast of WAAF and supports mostly residential and commercial uses. Schofield Barracks borders WAAF to the north.

COMMAND ORGANIZATION:

Major Command: U.S. Army, Pacific (USARPAC)
— Subcommand: U.S. Army Garrison, Hawaii (USAG-HI)
— Sub-installation: Wheeler Army Airfield

IRP EXECUTING AGENCIES:

— Investigation Phase Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division
— Remedial Design/Remedial Action Executing Agency: U.S. Army Corps of Engineers, Pacific Ocean Division

REGULATORY PARTICIPATION:

— Federal: U.S. Environmental Protection Agency, Region IX
— State: Hawaii Department of Health

REGULATORY STATUS:

Non-NPL
Technical Review Committee/Restoration Advisory Board Status: None
RCRA permit: Small quantity Generator
Interagency Agreement: None

MAJOR CHANGES TO IAP FROM PREVIOUS YEAR:

-- Completed RI/FS and received state of Hawaii Department of Health approval for no-action alternative at Network Seaport Control Center site.

-- Completed SI/IRA at Archery Range Dump Site.

Fort Shafter Installation Description

Fort Shafter Military Reservation is an active U.S. Army Garrison, Hawaii (USAG-HI) sub-installation. This sub-installation serves as the U.S. Army, Pacific Command Headquarters with infrastructure and also is home of the sub-installation's executing agency, U.S. Army Corps of Engineers, Pacific Ocean Division. Fort Shafter was established in 1907 and is the oldest Army sub-installation in Hawaii.

The land uses of the area surrounding this sub-installation are residential, park, school, business/commercial, light industrial and forest reserve.

The Fort Shafter Military Reservation is situated entirely within the ahupua'a of Kahauiki, a former native designated Hawaiian land unit of approximately 1,438 acres, extending from sea level to the 1,440 feet elevation. Approximately 474 acres is currently under the jurisdiction of the Army and the balance is owned or controlled by the State of Hawaii.

The earliest recorded uses of Kahauiki were reported to indicate the presence of irrigated agricultural terraces fed by Kahauiki Stream extending inland from the sea for about one-half mile.

An earthen banked fishpond named Weli was a resource of Kahauiki and appeared to have received a portion of freshwater from Kahauiki Stream (McCallister, 1933:91). This man-made prehistoric structure was filled with dredge spoil from construction of the Keehi seaplane harbor during the 1940s and is now located under the area seaward of Loop Road at Shafter Flats known as the Motor Park (Thompson, 1983:99).

The series of native Hawaiian land reforms adopted by Kamehameha III during the mid-1800s saw no kuleana registrations or awards for cultivated lands in Kahauiki, which became Crown Lands. Most of this land was subsequently leased to the Dowsett Estate who then subleased it to Star Dairy Company. It is reported that the dairy higher lands were used for grazing of cattle and the lower land for the raising of feed.

Following Annexation in 1898 the Kahauiki Crown Lands were designated the Kahauiki Military Reservation (KMR). All tenant leases were negotiated and completed in 1902 and in 1905 military construction began. A portion of KMR was set aside and re-named Fort Shafter in 1907 and during the period 1907-1909 two areas were constructed consisting of the initial Battalion cantonment at Palm Circle and Post Hospital (or old Tripler General Hospital) where the present NCO Family Housing area is serviced by Funston Loop. The Palm Circle Historic District, which incorporates a majority of the original 1907 cantonment structures, was listed on the National Register of Historic Places in 1984 and a National Historic Landmark in 1987.

In 1913, Fort Shafter was authorized to expand the original Palm Circle cantonment area and construction was completed in December of 1914. Construction consisted of a complete Regimental Post consisting of troop barracks, officer and NCO quarters, gun parks and support facilities along the length of Wisser Road from the Shafter Bowling Alley to Shafter Patch Gate (Meeken, 1974:16). Between 1956 and 1961, most of the 1914 Regimental Post barracks, offices, officer and NCO quarters, motor pool areas and warehouse facilities were demolished and removed. After 1969, Parks Road was re-aligned and re-routed south of the Fourth Street intersected and extended to intersect with Chamberlain Road.

The Hawaiian Ordnance Depot was designated and formed in 1917 I the area that included the high ground adjacent and north of the present Middle Street and east (mauka) of King Street which overlooked Kahauiki Stream and its wetlands to the west. The OR&L rail line consisted of a route to the Depot and along the coastal area. The Depot served as a separate post within Fort Shafter with its own gate house, Post Headquarters (lost during H-1 Freeway construction), quarters along Montgomery Drive (the depot commander's quarters is currently T-305), fire station, officer's club (T-313), a series of warehouses served by railroad sidings (T-341 to T-347, T-434, T-435, T-438, T-441, and T-443), and barracks (now T-320, Army Education Center), which became known as the Hawaii Arsenal Military Reservation at the end of 1918.

Fort Shafter Installation Description

Prior to 1949 much of the area seaward of King Street was cleared off and used as a storage area for the Signal Corps. By 1962, the Ordnance Corps was eliminated through the reorganization of the Army and the use of many of the standing structures were assigned to other commands. This area consists of the present-day 300-400 area, the Craft Shops and Child Care Center, the 29th Engineer Battalion Motor Pool and Base Plant, and the Shafter Flats area.

The Signal Corps area at Shafter Flats was initially occupied in October 1940 and consisted largely of warehouses, a Bachelor Officers Quarters, office buildings, and a photolab. This area lies on a former tidal marsh area behind the old Weli fishpond which was covered with over one and a half million cubic yards of dredge fill to an average elevation of 12 feet above sea level.

References:

McCallister, J. Gilbert, 1933, Archeology of Oahu. B.P. Bishop Museum Bulletin 104, Honolulu.

Meeken, Stanley R., 1974, "A History of Fort Shafter, 1894-1974." Machine reproduced copy at Fort Shafter Library.

Thompson, Erwin N., 1983, History of the U.S. Army Corps of Engineers in the Pacific 1905-1980.

Watanabe, Farley K., Archeologist, U.S. Army Corps of Engineers, Pacific Ocean Division, June 1993, Verbal Conversation

Kunia M.R. Installation Description

Kunia Military Reservation is an active U.S. Army Garrison, Hawaii installation. The facility is located approximately 21 miles northwest of Honolulu and 1 mile to the south of Schofield Barracks in the north-central plateau of Oahu. The installation was constructed in 1943-1944 as an underground aircraft assembly facility. At the end of the war, the installation was placed in reserve status. After a transfer from the Air Force to the Navy, the installation was used for ammunition and torpedo storage, and was later (1958-1959) converted to the U.S. Pacific Fleet Operations and Control Center. In 1981, Kunia was transferred to the Army and became part of the U.S. communications network providing rapid and secure radio relay communications for defense. This facility currently serves as a tri-services communications complex. Maintenance of the facility has changed in the FY97 from the Army to the Navy. The real property is still in the process of changing hands to the U.S. Navy.

Schofield Barracks Installation Description

Schofield Army Barracks (SB) is an active U.S. Army Garrison, Hawaii (USAG-HI) sub-installation and is the largest Army post in Hawaii.

SB was established in 1908 to provide a base for the Army's mobile defense of Pearl Harbor and the entire island. Initial construction of the post occurred between 1909 and 1917, during which time more than 250 buildings were erected. During the 1920s, expansion of SB continued as the infantry, cavalry, and artillery regiments were joined by regional battalion, and ordinance company, an ammunition team, a tank company, a medical regiment, a maintenance squadron, and chemical gas regiment units. These types of units continue to operate at SB. Wheeler Airfield was also constructed during the 1920s and housed divisions of the Army Air Corps. The airfield was made a separate entity in 1939 and was subsequently acquired by the U.S. Air Force in 1956, becoming officially known as Wheeler Army Airfield.

Following the attack by the Japanese of Pearl Harbor in 1941, Schofield Barracks became a supply base and command center for the war in the Pacific. Facilities were expanded when training camps were established because of increased wartime operations. During the war, SB is reported to have housed as many as 100,00 soldiers at one time.

After World War II, the population of SB declined sharply, however, a resurgence was experienced in 1951 when the Hawaiian Infantry Center was established as a basic training center for troops bound for the Korean War. Another resurgence in the population at the site occurred when the 25th Infantry Division returned to headquarters at SB in 1954.

As headquarters for the 25th Infantry Division and 45th Support Group, SB currently houses approximately 25,000 individuals. Its mission is to provide administration, training, and housing facilities for these two units, as well as depot and repair facilities, a medical facility, and community and housing support. General operations performed at SB include administration, training and small-scale industrial operations. No major industrial operations are performed at the site. Small-scale industrial operations include:

- Vehicle repair, maintenance, rustproofing and painting
- Weapons refinishing
- Optical instrumentation maintenance
- Laundering
- Photography
- Electrical equipment service
- Training aids manufacturing
- Building maintenance and repair
- Medical laboratory operations
- Sewage treatment
- Municipal activities

Training activities at SB consist of both non-firing and firing activities. Non-firing activities are conducted primarily in the East Range area and consist predominantly of field tactical training, tactical problem-solving, and routine bivouac. Firing activities, which involve use of live ammunition, are conducted primarily in the central portion of the Main Post Area.

In April 1985, the Army notified the Hawaii Department of Health that high levels (30 parts per billion) of trichloroethylene (TCE) had been detected in wells supplying drinking water to 25,000 people at Schofield Army Barracks. An additional 55,000 people in Wahiawa and Mililani obtain drinking water from public wells within 3 miles of hazardous substances on the base. Within 3 miles downstream of the sub-installation, Wahiawa Reservoir is used to irrigate 3,000 acres of pineapple fields and is also used for recreational activities.

Schofield Barracks Installation Description

An Army investigation in May 1985 confirmed TCE contamination of the drinking water wells. In September 1986, the Army installed an air stripping facility to remove TCE from the contaminated Schofield Barracks wells, making the water safe to drink.

Schofield Army Barracks was proposed for the National Priorities List in July 1989 and was placed on the final list in September 1990 as a result of contamination of the sole source drinking water aquifer. The Army and the U.S. EPA Region IX signed a Federal Facilities Agreement (FFA) in September 1991. State of Hawaii signed the FFA in June 1996. The Defense/State Memorandum of Agreement (DSMOA) and Cooperative Agreement have also been signed and oversight personnel hired by the State.

During the course of the investigation, 6 public meetings, and 10 technical review committee meetings were held with fewer than ten people from the public in attendance at any one of those meetings. A RAB display was part of the public informational sessions held both on Schofield and in Wahiawa in September 1996. There was no public interest shown for formation of a RAB at either of those meetings. There was no evidence of sufficient interest in sustaining a RAB at Schofield Barracks.

EPA placed the sub-installation in the “Construction Completion” category in September 1998, subsequent to the completion of repairs made on the landfill cap. The Army submitted the Final Closeout Report to EPA in December 1998 and the followed up with a request to remove Schofield Barracks from the NPL. Schofield Barracks was removed from the EPA’s NPL in August 2000.

Tripler Army M.C. Installation Description

Tripler Army Medical Center (TAMC) is an active U.S. Army Medical Facility. This facility serves as the active and retired members of the Armed Services and their dependents, U.S. Coast Guard, Commissioned Corps of the Coast and Geodetic Survey, Commissioned Corps of the Public Health Service, Veterans Administration Beneficiaries, and other eligible personnel authorized by Army Regulation 40-3.

TAMC was originally constructed in 1907 at Fort Shafter. Following World War II, it became apparent that the existing facilities were inadequate to serve patient needs. In 1944 a new site was selected, and construction began at its present location. In 1948, the new facilities were complete, and TAMC became the largest medical facility of the time. The Veterans' Administration (VA) has also built a center for aging on the sub-installation in 1997 and is in the process of constructing an addition to the existing hospital to service veterans.

The land uses of the area surrounding this sub-installation are residential and recreational (golf course) on the west, Aliamanu Military Reservation (AMR), a military housing installation, on the southwest across the H-1 Freeway, and the Red Hill Naval Housing Area/Fuel Storage Area, and Kaiser Permanente Moanalua Medical Center to the northwest across Moanalua Stream. To the north lie heavily forested areas of the Koolau Mountain Range.

Wheeler A.A.F. Installation Description

The central plateau and WAAF area have been used for Hawaiian settlement, cattle ranching, agricultural production (pineapples), and military use in the past. The area was densely forested through the early 1800s. Several Hawaiian villages were scattered across the plateau. There was some dry land cultivation and many of the gulches were cultivated with taro.

King Kamehameha III designated the entire WAAF area as Crown Lands in 1848. This land was leased for cattle ranching in the second half of the 18th century. Cattle grazing occurred in the southwestern portion of WAAF. Pineapple cultivation began in the area in 1900 and fields were located in the northeastern portion of WAAF. Formal arrival of the U.S. Military occurred in 1899 (Executive Order 30, Statute 750), although troops did not occupy the area until 1908 (Tomanaii-Tuggle and Bouthiller, 1993).

The area occupied by Wheeler Field was originally acquired by the Secretary of War in 1899 for the Schofield Barracks Military Reservation. Construction at WAAF began in February 1922 as an extension of Schofield Barracks. Wheeler Field was a small operation, housing two squadrons of the Hawaiian Department of Air Corps. Wheeler Field was the site of several historic aviation events such as the first nonstop Mainland to Hawaii flight (1927) and the first Hawaii to Mainland flight. Construction at the base resumed in the early 1930s. Officers' quarters, barracks, hangars, headquarters, runways, a fire station and other technical buildings were constructed at this time (Tomanaii-Tuggle and Bouthiller, 1993; Hirota 1983).

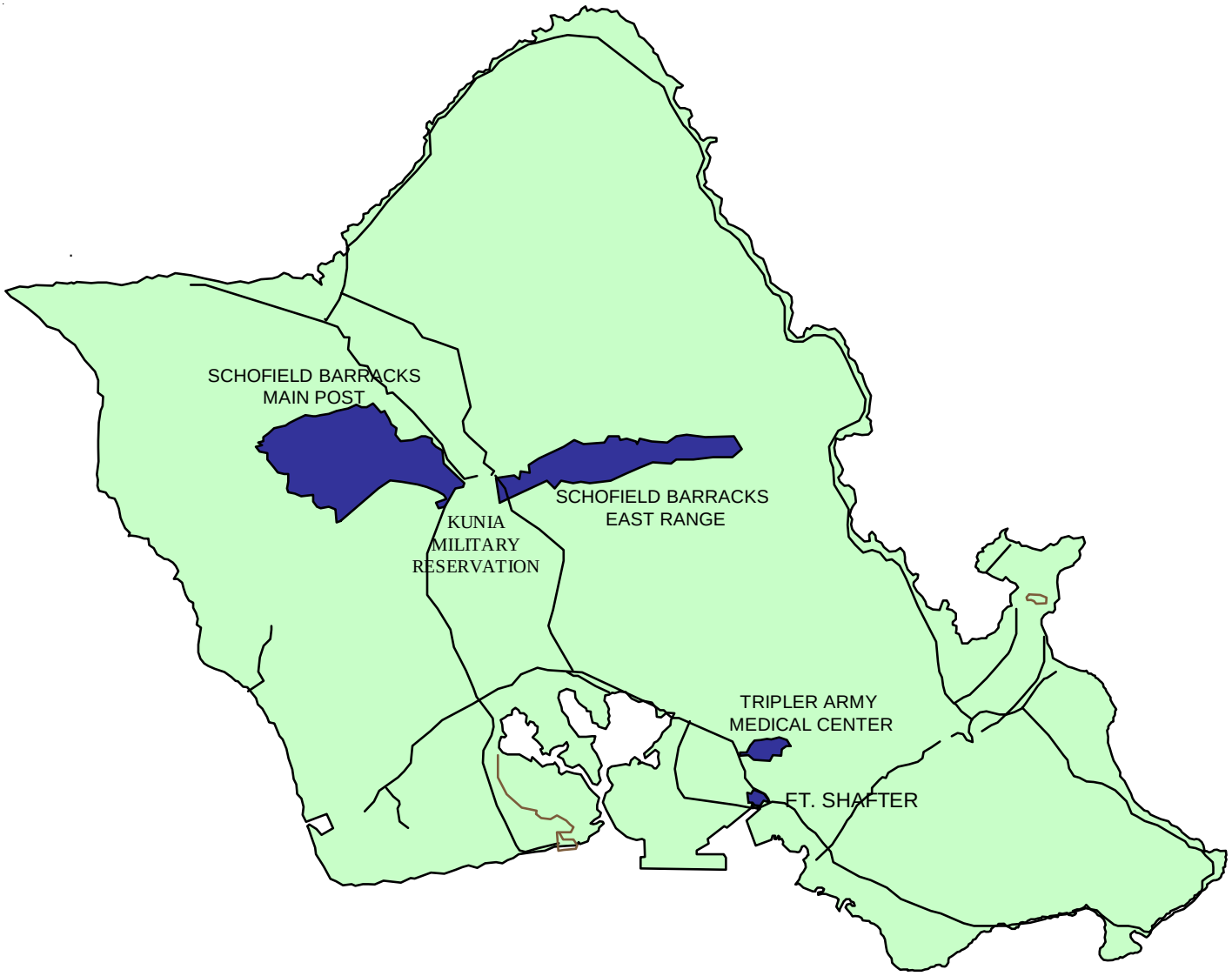
In 1939 Wheeler Field became a permanent military post. Units stationed at Wheeler included the 18th Pursuit Group and the 4th and 5th Reconnaissance Squadrons. Wheeler Field was bombed during the attack on Pearl Harbor. Anecdotal information suggests that eighty-three aircraft were destroyed and subsequently buried at the end of the runway or bulldozed into a nearby gulch. Two additional runways were constructed after the attack. They formed a triangle so that all three runways could be used simultaneously. Ammunition storage structures, bunkers, a new hangar, family housing and support structures were also constructed during World War II. In 1944, the 7th Air Service Command was established at the base to provide service and supply for B-29 bombers (Tomanaii-Tuggle and Bouthiller, 1993; Hirota 1983; 15th Air Base Wing, 1990).

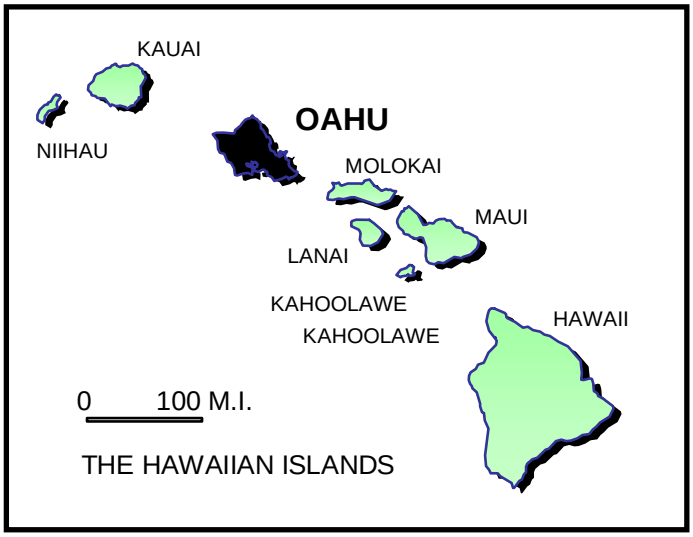
In April 1948, the installation was renamed Wheeler Air Force Base (AFB). In 1949, it was deactivated and placed in caretaker status. Wheeler AFB was reactivated in 1952 during the Korean War, which resulted in the organization of the 1508th Support Squadron. In the 1960s, the Air Force, Army, Navy, and Hawaii National Guard shared installation facilities. Documents indicate that aircraft maintenance was limited to flight line maintenance and minor frame and engine work (Dames and Moore, 1986). There were no heavy maintenance shops such as engine rebuilding or metal plating at the air base. Therefore, shop generated wastes were not extensive.

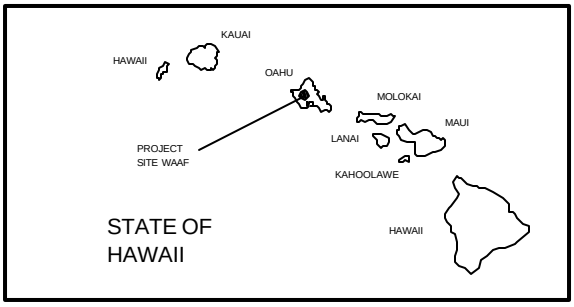
The U. S. Army assumed control of the administration, maintenance, and operations at WAFB in 1977. It became the center for all Army aviation activities in the Pacific (primarily helicopters).

The installation came under formal control of the U.S. Army in 1991 and was named Wheeler Army Airfield. Present organizations at the facility include the Defense Communications Agency, Air Forces' 6010th Aerospace Defense Group, Hawaii National Guard Aviation Support, and the 25th Infantry Division Aviation Brigade (Tomanaii-Tuggle and Bouthiller, 1993; Hirota, 1983).

Installation Maps







VICINITY MAP

N

NO SCALE

ISLAND OF OAHU, HAWAII

REF: VICINITY SITE MAP NO REFERENCE AVAILABLE	ENVIRONET	DRAWN BY GCL	DATE 02/19/01	PROJECT SITE VICINITY MAP
		CHECKED BY RSY	DATE 02/19/01	
		APPROVED BY RSY	DATE 02/19/01	
		PROJECT MANAGER EST	DATE 02/19/01	INSTALLATION ACTION PLAN WHEELER ARMY AIRFIELD OAHU, HAWAII
AUTOCAD FILE NO. IAP-01.DWG	PLOT SCALE 1:1	SCALE NO SCALE	PROJECT NO. HONF0060NA00	FIGURE NO. 1

Fort Shafter Contamination Assessment

ASSESSMENT OVERVIEW:

Investigations at Fort Shafter were initially conducted in 1983 through 1984 as part of the Army's sub-installation assessment program (Reference 1, Table 1). No significant sources of contamination were identified and no further action was recommended.

In August 1990, the U.S. Army Toxic and Hazardous materials Agency conducted an assessment to establish baseline data for potential waste sites (Reference 3, Table 1). Waste sites were broadly defined as locations from which hazardous constituents might be released into the environment, regardless of whether the material is a solid or a hazardous waste. The report identified 29 potential hazardous waste sites at Fort Shafter. Although the report did not differentiate between sites that are eligible for the Defense Environmental Restoration Account (DERA) funds under the Sub-installation Restoration Program, it did form the basis of sites listed in the Defense Environmental Restoration Tracking System AEDB-R) data base.

In 1992, the U.S. Army Corps of Engineers, Pacific Ocean Division conducted a Preliminary Assessment/Site Investigation (PA/SI) at 13 selected sites that were eligible for DERA funds. The primary contaminants of concern were POL, heavy metals, and pesticides. The PA recommended 7 sites for further investigation (AEDB-R sites FTSHF-01, -02, -14,-16,-23,-24, and -25) and 6 sites for No Further Response Action Planned, Response Complete (NFRAP RC)(AEDB-R sites FTSHF-04, -07, -09, -13, -18, and -22). The SI recommended 2 sites for further investigation/removal (AEDB-R sites. Field work for FTSHF-01 and -23 remedial actions have been completed and reports are being drafted.

In June 1994, the U.S. Army Environmental Hygiene Agency conducted a Preliminary Assessment (PA) on the remaining 16 sites identified in the USATHAMA Property Report. The purpose of the PA was "to determine the potential threat to human health and the environment, and to identify any waste sites needing a Sites Investigation." The PA recommended 3 sites for further action (AEDB-R sites FTSHF-17, -20, -27) and 13 sites for NFRAP RC (AEDB-R sites FTSHF-06, -08, -10, -11, -12, -15, -19, -21, -26, -28, -29, -30, and -43). For sites that require further action to be eligible for DERA funds, evidence of contamination must have resulted from past activities. However, in most cases this assessment was difficult. After review of the PA recommendations, sites FTSHF-21, and -28 were added to the list of sites requiring further investigation. Additional investigation conducted by Dames & Moore through POD in 1995 recommended NFRAP for sites FTSHF-17, -21 and -28. At FTSHF-27, a site inspection was conducted in 1997 and concluded no risk to human health or the environment was present.

The original database of potential hazardous waste sites (29 sites) was expanded in FY94 to 43 AEDB-R sites. The increase was primarily due to the inclusion of abandoned underground tanks (AEDB-R sites FTSHF-33, through -43). Removal actions were completed in FY94. Further remedial actions at FTSHF-42, due to contamination remaining after UST excavation, are currently underway.

A investigation was initiated in 1992 for eight areas located at Ft. Shafter Flats. The report identified five sites within the eight areas that require additional investigation. All other sites were NFRAP RC. Future action for the six sites is proposed.

Remediation of the former pesticide storage building 225 (FTSHF-01) and plating shop, building 1507 (FTSHF-was completed in March 1998. At the pesticide storage building 225 approximately 290 tons of pesticide (chlordane) contaminated soil was excavated from the site. A subsequent risk assessment determined that there were no unacceptable risks present at the site. At the former plating shop building 1507 (FTSHF-23), a sump and surrounding soil were removed. No further remedial actions are planned for the site.

Fort Shafter Contamination Assessment

PREVIOUS STUDIES

1. Environmental Science and Engineering, Inc., 1984, Installation Assessment of U.S. Army Support Command, Hawaii, Installations - Volume I: Fort Shafter and Subinstallations: Tripler Army Medical Center, Fort Kamehameha, and Kapalama Military Reservation, Oahu, Hawaii. Report 338.

2. Roy F. Weston, Inc., 1984, Installation Assessment of U.S. Army Support Command, Hawaii. Prepared for the U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland.

3. Roy F. Weston, Inc., 1990 Property Report. Prepared for the U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland.

4. Woodward-Clyde Consultants, July 1990, Regional Hawaii Army Solvent Recycling Study. Prepared for U.S. Army Support Command, Hawaii, and U.S. Army Western Command.

5. Woodward-Clyde Consultants, January 1991, Survey of Polychlorinated Biphenyls (PCBs), Fort Shafter Flats, Oahu, Hawaii. Prepared for the U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.

6. U.S. Army Corps of Engineers, November 1992, Preliminary Assessment for Six Selected Sites, Fort Shafter, Hawaii, Pacific Ocean Division, Honolulu, Hawaii.

7. PRC Environmental Management Inc., August 1993, Site Inspection at the Underground Storage Tank Site, U.S. Army Reserve Center, Fort Shafter Flats, Hawaii. Prepared for the U.S. Army Corps of Engineers, Pacific Ocean Division, Honolulu, Hawaii.

8. U.S. Army Corps of Engineers, January 1994, Site Investigation at Various Sites, Fort Shafter, Oahu, Hawaii, Pacific Ocean Division, Honolulu, Hawaii.

9. U.S. Army Environmental Hygiene Agency, June 14, 1994, Site Assessment No. 38-26-K28U-94, Waste Sites at Army properties, Hawaii. Prepared for USARPAC and USAG-HI.

10. Dames and Moore, June 1995, Interim Preliminary Assessment Report, Various Sites, Fort Shafter, Hawaii.

11. Harding Lawson Associates, February 1996, Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii.

12. Dames and Moore, March 1997, Site Inspection Report, Fort Shafter Solid Waste Dump, Oahu, Hawaii.

13. PRC Environmental Management, Inc., March 1998, Site Characterization and Remediation at the Pesticide Storage Building 225 and Plating Shop Building 1507, Fort Shafter, Hawaii.

Kunia M.R. Contamination Assessment

In August 1990 the U.S. Army Toxic and Hazardous Material Agency (USATHAMA) conducted an assessment to establish baseline data for potential waste sites (Reference 1, Table 1). Waste sites were broadly defined as locations from which hazardous constituents might be released into the environment, regardless whether the material is solid or hazardous. The report identified seven potential waste sites including a 305,000 gallon concrete diesel UST, and a drum storage area.

In June 1994, the U.S. Army Environmental Hygiene Agency conducted a Preliminary Assessment (PA) (Reference 2, Table 1) on the sites identified in the USATHAMA Waste Characterization Study. The purpose was to "determine the potential threat to human health and the environment and to identify eligibility for DERA funding." Sites requiring a Site Investigation would be DERA eligible. The PA concluded that only the 305,000-gallon diesel UST posed an "environmental problem."

In 1991 several pad-mounted transformers located within the tunnel complex were drained and removed by Unitek Environmental Services under subcontract to Fritz of Hawaii. Approximately fifteen, 30 year old transformers were removed from service.

A Preliminary Assessment/Site Investigation was initiated in 1993 to follow up on allegations of application of waste oils, including Polychlorinated Biphenyls (PCBs) on the surficial soils in the vicinity of the present building 25 site. This practice was discontinued around 1976 after the site was placed on caretaker status. The waste oil primarily consisted of sludge wastes from facility generators and oil purifiers. However, some waste electrical equipment oil, which potentially contained PCBs, may have been occasionally mixed with the used waste oil before application. The investigation found two PCB and lead contamination "hotspots" that were likely isolated occurrences and recommended confirmation samples.

A follow-up sampling and analysis was conducted at "two hotspots" found during the PA/SI at building 25 and the Microwave Tower. This follow-up investigation found no threat to human health or the environment at the site and no further remedial action was recommended.

The 305,000-gallon concrete diesel tank was removed during 1993-1994. The concrete walls of the tank itself were found to have elevated levels of TPH as diesel. The concrete was crushed then thermally treated. Soil surrounding and below the tank and piping was also found to be grossly contaminated with diesel, as defined by Department of Health guidance. Attempts to define the extent of contamination were not successful due to physical constraints. However, an interim remedial action to remove 3,429 cubic yards of grossly contaminated soil was conducted in 1995. This soil was thermally treated upon excavation. The excavation site boundaries remain grossly contaminated as confirmed with olfactory, visual, and analytical evidence. A remedial investigation to determine extent and characterize the contaminants was completed in FY01. Installation of an impervious layer above the footprint of the plume to close the site was planned for FY02.

Kunia M.R. Contamination Assessment

PREVIOUS STUDIES

1. Roy F. Weston, Inc., August 10, 1990, Waste Site Characterization Study, U.S. Army Property Waste Site Summary Category 6, U.S. Army Reserve Centers, Volume 21.

2. U.S. Army Environmental Hygiene Agency, June 14, 1994, Site Assessment No. 38-26-K28U-94, Waste Sites at Army Properties, Hawaii. Prepared for USARPAC and USAG-HI.

3. Wil Chee Planning and SCS Engineers, February 1994, Preliminary Assessment/Site Investigation Report, Kunia Field Station, Oahu, Hawaii. Prepared for Department of Army, U.S. Army Engineer District, Honolulu.

4. U.S. Army Corps of Engineers, Pacific Ocean Division, Environmental Division, hazardous Toxic Waste Branch, May 1995, Site Investigation Report, Microwave Tower and Building 25, Kunia Field Station, Oahu, Hawaii.

5. PRC Environmental Management, Inc., July 8, 1996, Site Characterization, Remedial Design, and Remediation of Petroleum-Contaminated Soil at Four U.S. Army Installations on Oahu, Hawaii, Underground Storage Tank Final Closure Report. Prepared for RCIE Environmental, Inc., the U.S. Army Corps of Engineers, and the U.S. Army Garrison, Hawaii.

6. PRC Environmental Management, Inc., June 16, 1996, Site Characterization, Remedial Design, and Remediation of Petroleum-Contaminated Soil at Four U.S. Army Installations on Oahu, Hawaii, Final Engineering Evaluation Report. Prepared for RCIE Environmental, Inc., the U.S. Army Corps of Engineers, and the U.S. Army Garrison, Hawaii

7. Wil Chee-Planning, Inc./Brewer Environmental Services, September 29, 2000, Remedial Investigation Report, Kunia Field Station, Oahu, Hawaii.

8. Wil Chee Planning Inc. October 2000, Human Health and Ecological Risk Assessment, Kunia Field Station, Oahu, Hawaii.

Schofield Barracks Contamination Assessment

ASSESSMENT OVERVIEW

Initial investigations at SB were conducted in 1983 and 1984 as part of the Army's initial installation assessment program ("Installation Assessment of U.S. Army Support Command, Hawaii", U.S. Army Toxic and Hazardous Materials Agency, May 1984). No significant sources of contamination were identified and no further action was recommended.

The recent history of environmental investigations at SB began with the reporting of TCE in the SB supply wells in April 1985. The Army informed the Hawaii Department of Health that up to 30 parts per billion (ppb) of TCE had been detected in the water supply wells that provide drinking water to over 25,000 people on post. Potential contamination of the local aquifer was of concern because an additional 55,000 persons in Wahiawa and Mililani obtain drinking water within 3 miles of the base. In response to the detection of TCE in its water wells, the Army installed an air stripper treatment system in 1986 to remove TCE from the drinking water.

Following discovery of TCE in the water supply, the U.S. Army Environmental Hygiene Agency (AEHA) conducted an "Investigation of Drinking Water Contamination by
Trichloroethylene, Schofield Barracks" in 1985. The report identified several potential generators and sources of TCE in and around SB including Area R and the former landfill
(OU 4).

Based on the presence of TCE in a sole source drinking water aquifer above the Safe Drinking Water Act Maximum Contaminant Level of 5 parts per billion (ppb), Schofield Barracks was proposed for the National Priorities List (NPL) in July 1989 and placed on the NPL in September 1990 with a Hazard Ranking Score of 28.9. A Federal Facility Agreement was subsequently negotiated among the Army, EPA Region IX, and the Hawaii Department of Health for the conduct of a comprehensive environmental investigation of Schofield Barracks.

In August 1990, the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) conducted an assessment of all hazardous waste sites on Schofield Barracks. The "USATHAMA Property Report - Schofield Army Barracks", prepared by Roy F. Weston, Inc., (Weston, 1990) identified and scored all hazardous waste sites on Schofield Barracks. This report formed the basis for the sites specified in the FFA for investigation and the current list of 126 sites under the Defense Site Environmental Restoration Tracking System (AEDB-R) database. Figure 2 shows the location of OU 1, OU 2, and OU 4 sites. Figures 3 and 4 show the locations of OU 3 sites on the Main Post area and Figure 5 shows the locations of OU 3 sites on the East Range.

Under the IR program, a Preliminary Assessment/Site Investigation (PA/SI) was conducted by USATHAMA in FY92 (Harding Lawson Associates, 1992) to aid in scoping the RI/FS efforts for OU 1, OU 2, and OU 4. Under the PA/SI, sampling at OU 1 sites was limited to borings at the Former Laundry (SCHBR-19) and was recommended for no further action based on site inspection and records review. All other sites were recommended for further investigation for TCE contamination under the RI program initiated in January 1993.

Other related environmental studies include two investigations of the former landfill. A study was conducted under contract to Kennedy Engineers in 1980 to examine various options for solid and hazardous waste disposal at Schofield Barracks because the site's landfill permit was due to expire on 31 December 1981. The key report of the three reports comprising this study was the Solid and Hazardous Waste Disposal Plan; its two companion documents were the Interim Disposal Alternatives report and the Closure of Existing Landfill report. Details of this study are provided under specific discussion of the landfill (OU 4, AEDB-R Site 12).

Schofield Barracks Contamination Assessment

OU 1 RI investigations conducted from March through September 1993 concluded that none of the 11 sites are sources of TCE contamination and that none of the sites require further investigation. As a result, a No Further Action Record of Decision (ROD) was signed by the Army and EPA in November 1995 and February 1996 respectively. OU 4 RI investigations conducted from February 1993 through March 1994 concluded that the landfill is a continuing source of TCE and carbon tetrachloride in the groundwater. However, groundwater flow direction eliminates the landfill as the TCE source affecting the Schofield Supply Wells. OU 2 Phase I RI investigations (February 1993 through May 1994) focused on collecting groundwater data from municipal and irrigation wells surrounding Schofield Barracks to determine the extent of impacted wells. OU 2 investigations also evaluated wellhead treatment as the final OU 2 remedy. The OU 2 studies determined that no wells, other than the Schofield supply wells and the Kunia supply wells (also Army owned) have been impacted by TCE or any other contaminant associated with Schofield Barracks. Phase II OU 2 RI and OU 4 Feasibility Study (FS) field efforts were initiated in October 1994 to support preparation of RI and FS reports, proposed plans and RODs.

With the completion of repairs to the landfill cap in July 1998 and the completion of the Preliminary Closeout Report, EPA determined that all construction activities related to CERCLA remedial actions at Schofield Barracks were completed according to the requirements of the Records of Decision for the four Operable Units. Consequently, EPA classified Schofield Barracks in the “Construction Completion” category on September 22, 1998. The Final Closeout Report was submitted to EPA on December 1, 1998. The Army subsequently requested for removal of Schofield Barracks from the NPL. In November 1999 EPA concurred on proceeding with the delisting process. The Final Closeout Report was updated and re-submitted to EPA in February 2000. Schofield Barracks was formally removed from the EPA’s National Priorities List in August 2000. A Five-Year Review of the effectiveness of remedies put in place under OU 2 and OU 4 is currently underway.

Schofield Barracks Contamination Assessment

PREVIOUS STUDIES

1. Report, Schofield Barracks Landfill, January 1980, Ecology and Environment, Inc., TDD# F-9-8009-16.

2. Solid and hazardous Waste Disposal Plan for Department of the Army, Sanitary Landfill Study, Schofield Barracks, Oahu, Hawaii, November 1980, Kennedy Engineers.

3. Installation Assessment of U.S. Army Support Command, Hawaii, Installation - Volume II: Schofield Barracks and Pohakuloa Training Area, Kilauea Military Camp, Makua Military Reservation, and Kipapa Ammunition Storage Sites, Hawaii, May 1984, Environmental Science and Engineering, Inc., Report No. 338.

4. Long-Term Care and Maintenance of Sanitary Landfill, Schofield Barracks, Oahu, Annual Maintenance Inspection, July 1985, U.S. Army Engineer Division - Pacific Ocean.

5. Water Quality Engineering Consultation No. 31-24-0675-87, Contamination of Drinking Water by Trichloroethylene and Tetrachloroethylene, Schofield Barracks, Oahu, Hawaii, February 1987, U.S. Army Environmental Hygiene Agency

6. USATHAMA Property Report - Schofield Army Barracks, August 1990, Roy F. Weston, Inc.

7. Final Preliminary Assessment/Site Investigation Report for Operable Units 1, 2, and 4, Schofield Army Barracks, Island of Oahu, Hawaii, May 1992, Harding Lawson Associates.

8. Final Preliminary Assessment Report for Operable Unit 3 Sites, Schofield Army Barracks, Island of Oahu, Hawaii, October 1993, Harding Lawson Associates and IMS Engineers, Inc.

9. Final Field Screening Sampling and Analysis Plan, Operable Unit 3, Schofield Army Barracks, Island of Oahu, Hawaii, January 1994, IMS Engineers, Inc. and Harding Lawson Associates.

10. Final Sampling and Analysis Plan for Operable Unit 4 Phase II Remedial Investigation Feasibility Study Field Program, Schofield Army Barracks, Island of Oahu, Hawaii, September 1994, Harding Lawson Associates.

11. Final Sampling and Analysis Plan for Operable Unit 2 Phase II Remedial Investigation, Schofield Army Barracks, Island of Oahu, Hawaii, September 1994, Harding Lawson Associates.

12. Preliminary Assessment Addendum Soil Boring Report, Wheeler Army Airfield, Oahu, Hawaii, November 1994, Flour-Daniel, Inc.

13. Remedial Investigation report for Operable Unit 1, Schofield Army Barracks, Island of Oahu, Hawaii, April 1995, Harding Lawson Associates.

14. Proposed Plan for Operable Unit 1, Schofield Army Barrack, Island of Oahu, Hawaii, June 1995, Harding Lawson Associates.

15. Record of Decision for Operable Unit 1, Schofield Army Barracks, Island of Oahu, Hawaii, September 1995, Harding Lawson Associates.

16. Feasibility Study Report for Operable Unit 4, Schofield Army Barracks, Island of Oahu, Hawaii, December 1995, Harding Lawson Associates.

Schofield Barracks Contamination Assessment

PREVIOUS STUDIES

17. Remedial Investigation Report for Operable Unit 3, Schofield Army Barracks, Island of Oahu, Hawaii, February 1996, Uribe and Associates.

18. Feasibility Study Report for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii, February 1996, Harding Lawson Associates.

19. Proposed Plan for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii, February 1996, Harding Lawson Associates.

20. Proposed Plan for Operable Unit 4, Schofield Army Barracks, Island of Oahu, Hawaii, April 1996, Harding Lawson Associates.

21. Proposed Plan for Operable Unit 3, Schofield Army Barracks, Island of Oahu, Hawaii, April 1996, Uribe and Associates.

22. Draft Remedial Investigation Report for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii, April 1996, Harding Lawson Associates.

23. Record of Decision for Operable Unit 4, Schofield Army Barracks, Island of Oahu, Hawaii, July 1996, Harding Lawson Associates.

24. Record of Decision for Operable Unit 3, Schofield Barracks, Island of Oahu, Hawaii, August 1996, Uribe and Associates.

25. Record of Decision for Operable Unit 2, Schofield Barracks, Island of Oahu, Hawaii, August 1996, Harding Lawson Associates.

26. Site G Soil Boring Report, Schofield Barracks, Island of Oahu, Hawaii, November 1996, Uribe and Associates.

27 Long-Term Monitoring Plan for Operable Unit 2, Schofield Barracks, Island of Oahu, Hawaii, September 1996, Harding Lawson Associates.

28. Long-term Monitoring and Operations and Maintenance Plan for Operable Unit 4, Schofield Barracks, Island of Oahu, Hawaii, September 1996, Harding Lawson Associates.

29. Final Community Relations Plan for Schofield Army Barracks, Island of Oahu, Hawaii, January 1997, Harding Lawson Associates.

30. Interim Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, Schofield Army Barracks, Island of Oahu, Hawaii, April 1997, Harding Lawson Associates.

31. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, April and May 1997, Schofield Army Barracks, Island of Oahu, Hawaii, December 1997, Harding Lawson Associates.

32. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, July and August 1997, Schofield Army Barracks, Island of Oahu, Hawaii, December 1997, Harding Lawson Associates.

Schofield Barracks Contamination Assessment

PREVIOUS STUDIES

33. Final Quality Assurance Project Plan for the Long-Term Groundwater Monitoring Program for Operable Units 2 and 4, Schofield Army Barracks, Island of Oahu, Hawaii, January 1998, Harding Lawson Associates.

34. Public Health Assessment for Schofield Barracks, Wahiawa, Honolulu County, Hawaii, CERCLIS No. HI7210090026, February 11, 1998, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry.

35. Final Closeout Report, Schofield Barracks, Island of Oahu, Hawaii, November 1998, U.S. Army Garrison, Hawaii.

36. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, January and February 1998, Schofield Army Barracks, Island of Oahu, Hawaii, July 1998, Harding Lawson Associates.

37. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, April and May 1998, Schofield Army Barracks, Island of Oahu, Hawaii, November 1998, Harding Lawson Associates.

38. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, July and August 1998, Schofield Army Barracks, Island of Oahu, Hawaii, December 3, 1998, Harding Lawson Associates.

39. Long-Term Landfill Gas Monitoring Report for Operable Unit 4, June 1998, Schofield Barracks Hawaii, July 1998, Harding Lawson Associates.

40. Long-Term Landfill Gas Monitoring Report for Operable Unit 4, September 1998, Schofield Barracks Hawaii, September 1998, Harding Lawson Associates.

41. Long-Term Landfill Gas Monitoring Report for Operable Unit 4, February 1999, Schofield Barracks Hawaii, February 1999, Harding Lawson Associates.

42. Operable Unit 4, Former Landfill Post-Closure Inspection Report, Schofield Barracks, Island of Oahu, Hawaii, October 1998, U.S. Army Garrison, Hawaii.

43. Final Closeout Report for Schofield Army Barracks, U.S. Environmental Protection Agency, Region IX, November 1999.

44. Operable Unit 4, Former Landfill Post–Closure Inspection Report, Schofield Barracks, Island of Oahu, Hawaii, January 1999, U.S. Army Garrison, Hawaii.

45. Operable Unit 4, Former Landfill Post–Closure Inspection Report, Schofield Barracks, Island of Oahu, Hawaii, April 1999, U.S. Army Garrison, Hawaii.

46. Operable Unit 4, Former Landfill Post–Closure Inspection Report, Schofield Barracks, Island of Oahu, Hawaii, July 1999, U.S. Army Garrison, Hawaii.

47. Operable Unit 4, Former Landfill Post–Closure Inspection Report, Schofield Barracks, Island of Oahu, Hawaii, October 1999, U.S. Army Garrison, Hawaii.

48. Long-Term Landfill Gas Monitoring Report for Operable Unit 4, March 1999, Schofield Barracks Hawaii April 1999, Harding Lawson Associates.

PREVIOUS STUDIES

49. Long-Term Landfill Gas Monitoring Report for Operable Unit 4, October 1999, Schofield Barracks Hawaii, October 1999, Harding Lawson Associates.

50. Long-Term Landfill Gas Monitoring Report for Operable Unit 4, January 2000, Schofield Barracks Hawaii, January 2000, Harding Lawson Associates.

51. Long-Term Groundwater Monitoring Report for Operable Units 2, February 1999, Schofield Army Barracks, Island of Oahu, Hawaii, May 1999, Harding Lawson Associates.

52. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, May and June 1999, Schofield Army Barracks, Island of Oahu, Hawaii, September 1999, Harding Lawson Associates.

53. Long-Term Groundwater Monitoring Report for Operable Unit 2, August 1999, Schofield Army Barracks, Island of Oahu, Hawaii, December 1999, Harding Lawson Associates.

54. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, November 1999, Schofield Army Barracks, Island of Oahu, Hawaii, February 2000, Harding Lawson Associates

55. Long-Term Groundwater Monitoring Report for Operable Units 2, January to March 2000, Schofield Army Barracks, Island of Oahu, Hawaii, July 2000, Harding Lawson Associates

56. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, May to July 2000, Schofield Army Barracks, Island of Oahu, Hawaii, October 2000, Harding Lawson Associates

57. Long-Term Groundwater Monitoring Report for Operable Unit 2, August 2000, Schofield Army Barracks, Island of Oahu, Hawaii, November 2000, Harding Lawson Associates

58. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, November and December 2000, Schofield Army Barracks, Island of Oahu, Hawaii, February 2001, Harding Lawson Associates

59. Long-Term Gas Monitoring Report for Operable Unit 4, April 2000, Schofield Barracks, Hawaii, May 2000, Harding Lawson Associates.

60. Long-Term Gas Monitoring Report for Operable Unit 4, July 2000, Schofield Barracks, Hawaii, August 2000, Harding Lawson Associates.

61. Long-Term Gas Monitoring Report for Operable Unit 4, November 2000, Schofield Barracks, Hawaii, May 2000, Harding ESE.

62. Long-Term Gas Monitoring Report for Operable Unit 4, January 2001, Schofield Barracks, Hawaii , February 2001, Harding ESE.

63. Long-Term Groundwater Monitoring Report for Operable Unit 2, May 2001, Schofield Army Barracks, Island of Oahu, Hawaii, January –March 2001, Harding ESE

64. Long-Term Groundwater Monitoring Report for Operable Units 2 and 4, April – June 2001, Schofield Army Barracks, Island of Oahu, Hawaii, October 2001, Harding ESE

Schofield Barracks Contamination Assessment

PREVIOUS STUDIES

65. Long-Term Groundwater Monitoring Report for Operable Unit 2, July – September 2001, Schofield Army Barracks, Island of Oahu, Hawaii, November 2001, Harding ESE

66. Long-Term Gas Monitoring Report for Operable Unit 4, May 2001, Schofield Barracks, Hawaii , May 2001, Harding ESE.

67. Long-Term Gas Monitoring Report for Operable Unit 4, November 2001, Schofield Barracks, Hawaii, August 2000, Harding Lawson Associates.

68. Long-Term Gas Monitoring Report for Operable Unit 4, February 2002, Schofield Barracks, Hawaii, February 2002, Harding ESE.

69. Remedial Investigation and Risk Assessment Report, Former UST Site - Schofield Barracks Building 3010A, Oahu, Hawaii, June 2001, Brewer Environmental Services/Wil Chee – Planning, Inc.

Tripler Army M.C. Contamination Assessment

Investigations at TAMC were initially conducted in 1983 through 1984 as part of the Army's installation assessment program. No significant sources of contamination were identified an no further action was recommended.

In August 1990, the U.S. Army Toxic and Hazardous Material Agency (USATHAMA) conducted an assessment to establish baseline data for potential waste sites (Reference 3, Table 1). Waste sites were broadly defined as locations from which hazardous constituents might be released into the environment, regardless whether the material is solid or hazardous waste. The report identified 19 potential hazardous waste sites at TAMC. Although the report did not differentiate between sites that are eligible for Defense Environmental Restoration Account (DERA) funds under the IRP, it did form the basis of sites listed in the Army Environmental Database - Restoration (AEDB-R) database.

Since 1992, the U.S. Army Corps of Engineers, Pacific Ocean Division (POD) have been conducting investigations and removals at various sites identified in the USATHAMA Property Report. They include AEDB-R sites TAMC-01 through 07. The primary contaminants of concern were POL, heavy metals, and pesticides. No further response actions planned (NFRAP) were recommended for sites TAMC-01, 03, -05, -06 and -07 following expedited removal actions. Removal of contaminated soils at the building 145 UST site (TAMC-11) was completed in 1999.

In June 1994, the U.S. Army Environmental Hygiene Agency conducted a site assessment on the remaining sites identified in the USATHAMA property Report. The purpose of the site assessment was to determine the potential threat to human health and the environment, and to identify any waste sites needing a Site Investigation (SI) would be DERA eligible. The PA recommended NFRAP RC for all of the remaining sites. After review of the PA recommendations, however, several sites were added to the list requiring further investigation.

Dames & Moore was contracted by DPW through the Corps of Engineers, Pacific Ocean Division, to conduct a PA at four additional sites (TAMC-08, -09, -10 & -12) in September, 1994. The final PA dated December 1995, recommended NFRAP RC for the four sites.

The Remedial Investigation for the Former Landfill (TAMC-02) was completed in May 1998. The Feasibility Study report was finalized in February 1999. The remedial design/remedial action project was initiated in 1999, the design was completed in 2000. Installation of the cap is currently underway at the former landfill.

The Remedial Investigation of the former building 125 UST (TAMC-04) site was initiated in 1999 and is currently on-going. Field work at this site has been completed.

Tripler Army M.C. Contamination Assessment

PREVIOUS STUDIES

1. Brewer Environmental Services, August 1992, Testing for Polychlorinated Biphenyl (PCB) Contamination, Tripler Army Medical Center, Honolulu, Oahu, Hawaii. Prepared for U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.

2. Clayton Environmental Consultants, November 1993, Chemical Data Acquisition Plan for Remediation of PCB Contaminated Soil at Substation, Tripler Army Medical Center, Oahu, Hawaii. Prepared for U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.

3. Clayton Environmental Consultants, November 1993, Remediation Action Work Plan for Remediation of PCB Contaminated Soil at Substation, Tripler Army Medical Center, Oahu, Hawaii. Prepared for U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.

4. Clayton Environmental Consultants, November 1993, Chemical Data Acquisition Plan for Remediation of Pesticide Contaminated Soil at Building 114, Tripler Army Medical Center, Oahu, Hawaii. Prepared for U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.

5. Clayton Environmental Consultants, November 1993, Remediation Action Work Plan for Remediation of Pesticide Contaminated Soil at Building 114, Tripler Army Medical Center, Oahu, Hawaii. Prepared for U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.

6. Dames & Moore, December 1995, Final Interim Preliminary Assessment Report Various Sites at Tripler Army Medical Center, Honolulu, Oahu, Hawaii, for U.S. Army Engineer District Honolulu.

7. Environmental Science and Engineering, Inc., 1984, Installation Assessment of U.S. Army Support Command, Hawaii, Installations - Volume I: Fort Shafter and Subinstallations: Tripler Army Medical Center, Fort Kamehameha, and Kapalama Military Reservation, Oahu, Hawaii, Report No. 338.

8. U.S. Army Environmental Hygiene Agency, June 1994, Site Assessment No. 38-26-K28U-94, Waste Sites at Army Properties, Hawaii. Prepared for USARPAC and USAG-HI.

9. Roy F. Weston, Inc., 1984, Installation Assessment of U.S. Army Support Command, Hawaii. Prepared for the U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland.

10. Roy F. Weston, Inc., 1990, Property Report. Prepared for U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland.

11. Brewer Environmental Services, October 1996, Preliminary Field Screening Investigation, Tripler Army Medical Center Landfill, Oahu, Hawaii. Prepared for U.S. Army Garrison, Hawaii.

12. Brewer Environmental Services, May 1998, Comprehensive Field Investigation, Tripler Army Medical Center Landfill, Oahu, Hawaii. Prepared for U.S. Army Garrison, Hawaii.

13. Brewer Environmental Services, February 1999, Remedial Alternatives and Feasibility Study, Tripler Army Medical Center Landfill, Oahu, Hawaii. Prepared for U.S. Army Garrison, Hawaii.

14. Environmental Chemical Corporation, August 2000, Tripler Army Medical Center Landfill Final Closure Specifications

15. Edward K. Noda and Associates, June 2001, Draft Site Characterization, Tripler Army Medical Center, Oahu, Hawaii. Prepared for U.S. Army, Garrison, Hawaii

Wheeler A.A.F. Contamination Assessment

HISTORY: Pursuant to the Action Memorandum effective 15 March 1993, the Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health), and the Deputy Assistant Secretary of the Army (Installations and Housing) exchanged Wheeler Air Force Base, Hawaii (formerly U.S. Air Force) for Fort Kamehameha Military Reservation, Hawaii (formerly U.S. Army). In accordance with the exchange, the Department of the Air Force was responsible for funding the removal and disposal of all hazardous substances on the former Wheeler Air Force Base (now known as Wheeler Army Airfield), including those identified on the Air Force Finding of Contamination Certificate, dated 4 November 1991. The Department of the Army was responsible for funding the removal and disposal of all hazardous substances on the Fort Kamehameha Reservation, including those on the Army Finding of Contamination Certificate, dated 3 December 1991. The term "hazardous substances" did not include petroleum and related products, also referred to as "POL substances".

The Department of the Air Force and the Department of the Army met all their respective requirements regarding funding and disposal of hazardous substances identified in the Installation Finding of Contamination Certificates. Therefore, a Memorandum of Agreement dated 26 August 1999 was signed by the Department of the Air Force and the Department of the Army to exchange the environmental responsibilities of the two installations. In accordance with the agreement, funding and disposal of any future restoration sites, all POL substance sites, funding and management of all site operation and maintenance requirements, and the applicable programming of Department of Defense (DOD) restoration tracking databases are the responsibility of the current respective military department installation landholder.

ASSESSMENT OVERVIEW: Initial environmental investigations at WAAF were conducted in 1983 by the Air Force. The original Preliminary Assessment (PA)/Records Search identified eight sites for further evaluation. These sites consisted of a landfill, two dump sites, a fire fighting training area, an abandoned oxidation pond, two aircraft parking/wash areas, and the sanitary sewer system. All areas except for the oxidation pond were evaluated as potentially impacted by past hazardous waste/substance activities. A Federal Facilities Review of the installation was conducted for EPA Region IX in 1991 by the University of Hawaii Environmental Center, under the auspices of the Hawaii State Department of Health (HDOH).

Subsequent Phase II, Stage 1 and Stage 2 investigations resulted in No Further Response Action Planned (NFRAP) decision documents covering four of the IRP sites identified by the Phase I records search: the two aircraft parking areas (SD05 and SD06), the sanitary sewer system (WP07), and the abandoned oxidation ponds (WP08). The four sites were judged by the investigations as not having been significantly impacted by site activities and placed under NFRAP status. This status referred to Air Force administrative closure only and did not meet the current Air Force requirement of being cosigned by a regulatory agency. The NFRAPs were completed in September 1991 and were signed by the Air Force on 18 September 1991.

The other four IRP sites were the subjects of the Phase II, Stage 3 Remedial Investigation (RI) initiated in January 1991. The preliminary findings of the RI recommended remedial action for the two former dumpsites (DP02 and DP03) and NFRAP status for the former landfill (LF01) and the fire fighting training area (FT04). NFRAP documents for sites LF01 and FT04 were signed by both HDOH and the U.S. Air Force on 10 November 1997, effectively closing the sites. A Non-time Critical Removal Action at the Kunia Gate Dump (DP03) was performed in 1996. The removal action included debris removal, surface grading, and placement of a cap. Site DP03 was subsequently closed, and NFRAP documents were signed by both HDOH and the U.S. Air Force. A Non-time Critical Removal Action was also conducted at the Gulch Runway Dump (DP02) in 1996. Excavation was performed per cleanup guidelines established by the State of Hawaii. A total of 469 drums were excavated from this area with 148 drums containing waste products. In addition, approximately 455 cubic yards of PCB-contaminated soil were removed from the site. A Draft NFRAP for Site DP02 was released on 5 January 2001. Final NFRAP for the site is pending HDOH review.

Wheeler A.A.F. Contamination Assessment

The initial 1983 Records Search was not performed in accordance with current regulatory requirements. In response to this, a comprehensive PA/Site Investigation (SI) was initiated in September 1994. This investigation encompassed all previous studies and served as the basis upon which subsequent site investigations were performed. Four IRP sites and seven areas of concern (AOCs) were investigated during this PA. All four IRP sites had actually received NFRAP in September 1991 as stated previously. The four other IRP sites were not evaluated during the PA because they were the subjects of a RI conducted in 1991. The PA recommended three of the IRP sites for closure. NFRAP documents for sites SD05, SD06, and WP07 were signed by both HDOH and the U.S. Air Force in May 2000. Additional information review was conducted in 2000 for the fourth IRP site WP08. The review concluded that there was no evidence that hazardous materials had been released into the ponds, and no further action is required. NFRAP documents for WP08 were signed by HDOH and the U.S. Air Force.

The seven AOCs identified in the PA included a former aircraft revetment area (EA01), a vehicle wash rack (EA02), a hydraulic lift sump (EA03), an UST (EA04), an AST (EA07), a former POL transfer station drum storage area (EA05), and a drum disposal area (EA06). Following the PA, a SI was conducted at one AOC, the drum disposal area EA06. Since the contaminant levels detected in the surface and subsurface soils were below action levels, NFRAP closure was recommended in the SI. However, due to the physical hazard the site presents, a removal action at the site is under consideration.

The status of the six other AOCs is described below. The UST site (EA04) was closed as a part of the UST program. The AST at site EA07 was replaced in March 1997 and is no longer a concern. A passive soil gas screening survey and limited soil sampling was conducted in January 2001 at sites EA01, EA02, EA03, and EA05.

Additional potential IRP sites were identified in a soil boring investigation conducted by the U.S. Army Environmental Center. The investigation was conducted as a part of the Schofield Barracks investigation to identify potential sources of TCE. Four additional sites were identified and included a landfill site, a former aircraft revetment site, a fire protection training area, and a former hot mix plant. Details of these sites are provided under specific discussion of these sites.

In addition, numerous potential sites have been identified including former UST/AST sites and associated pipelines, a former firing range, and an earthen sump at a former gas station.

PREVIOUS STUDIES

IRP, AOC, and Other Potential Sites

1. Phase I Records Search, Wheeler AFB, Oahu, Hawaii, July 1983, Sam Hirota, Inc.

2. Phase II Stage I, Confirmation/Quantification, Wheeler AFB, Oahu, Hawaii, April 1986, Dames and Moore.

3. Geophysical Investigations, Wheeler AFB, Oahu, Hawaii, January 1987, Dames and Moore.

4. Technical Report V. I-111, Wheeler AFB, Oahu, Hawaii, January 1991, Harding Lawson Associates.

5. 15 ABW IRP, No Further Action Decision Document, Four Sites, Wheeler AFB, Oahu, Hawaii, September 1, 1991.

6. Federal Facility Preliminary Assessment/Site Inspection Review, Wheeler AFB, Oahu, Hawaii, September 1, 1991, University of Hawaii.

7. USAF IRP Stage II, Phase 3 Draft Sampling and Analysis Plan Remedial Investigation/Feasibility Study, September 1991, Engineering - Science

8. Test Results Underground Storage Tank Tightness Test Program, Conducted for PACAF, 15 ABW, December 1, 1992, Galson Corporation.

9. Management Action Plan Wheeler Army Airfield, December 1992, Installation Restoration Program, Environmental Flight, 15th Air Base Wing, U. S. Air Force.

10. Informal Technical Information Report (ITIR), Vol. 1-Table 4.1 Analytical Data Summary for Landfill 1-LF001, Phase II, Stage 3, RI for Wheeler AAF, November 1, 1993, Engineering - Science.

11. Archaeology and History on the Central O'ahu Plateau: A Cultural Resources Assessment of Wheeler Army Airfield, January 1994, International Archaeological Research Institute, Inc.

12. Drummed Soil Analytical Results, Wheeler AFB, March 1, 1994, Engineering - Science.

13. Site Characterization for Risk Screening on Past Hazardous Waste Sites and the Development for a Relative Risk Ranking Approach at Pacific Air Forces Command Bases, Vol. 1-III, July 1, 1994, Engineering - Science.

14. USAF IRP Stage II, Phase 3 Engineering Evaluation and Cost Analysis (EE/CA), October 1, 1994, Parsons Engineering - Science.

15. Wheeler Army Air Field, Oahu, Hawaii, Preliminary Assessment Addendum Soil Boring Report (Draft), November 1, 1994, Fluor Daniel, Inc.

16. USAF IRP Stage II Phase 3 RI Final Report Vol. 2- Appendices, Wheeler Army Airfield, Hawaii, December 1, 1994, Parsons Engineering - Science.

17. USAF IRP Stage II Phase 3 RI Final Report Vol. 1, Wheeler Army Airfield, Hawaii, December 1, 1994, Parsons Engineering - Science.

PREVIOUS STUDIES

18. USAF IRP Stage II Phase 3 RI Draft No Further Response Action Planned (NFRAP) Document, Wheeler Army Airfield, Hawaii, December 1994, Parsons Engineering - Science.

19. Remedial Action at Wheeler Army Air Field, Oahu, Hawaii, Final Site-Specific Environmental Cleanup Plan, July 1, 1995, OHM Remediation Services Corporation.

20. Remedial Action at Wheeler Army Air Field, Oahu, Hawaii, Final Site-Specific Quality Project Plans, July 1, 1995, OHM Remediation Services Corporation.

21. Memorandum to Greg Olmstead, HDOH re: Transmittal of VLEACH Model Results That Exclude the Effects of Biodegradation for the WAA Fire Training Area, July 25, 1995, Lt. Col. Randie Strom, 15CES/CEVR.

22. Memorandum to Gary Siu, HDOH re: Cover Repair of Kunia Gate Dump Located at Wheeler Army Airfield, August 23, 1995, Lt. Col. Randie Strom, 15CES/CEVR.

23. Memorandum to Gregory Olmsted, HDOH re: Remediation of IRP Sites at Wheeler Army Airfield, January 4, 1996, Lt. Col. Randie Strom, 15CES/CEVR.

24. Final Environmental Report for Gulch Runway Dump Drum Investigations, Wheeler Army Air Field, January 4, 1996, EA Engineering, Science, and Technology, Inc.

25. Letter to Jeff Klein, 15CES/CEVR re: Remediation of DP02, DP03, and FT04 at Wheeler Army Airfield, January 30, 1996, Gregory Olmsted, HDOH.

26. Draft Final PA/SI, Volumes 1 and 2, July 1996, EA Engineering.

27. Final No Further Response Action Planned Decision Document, Landfill 1, Site LF01, Wheeler Army Airfield, Oahu, Hawaii, August 14, 1997, OHM Remediation Services Corporation.

28. Final No Further Response Action Planned Decision Document, Fire Training Area, FT04, Wheeler Army Airfield, Oahu, Hawaii, August 14, 1997, OHM Remediation Services Corporation.

29. Final No Further Response Action Planned Decision Document, Kunia Gate Dump, Site DP03, Wheeler Army Airfield, Oahu, Hawaii, September 1997, OHM Remediation Services Corporation.

30. Management Action Plan, Executive Summary, November 1997, 15 ABW, Pacific Air Force, 15 CES/CEVR.

31. Final Decision Document to Support No Further Response Action Planned (NFRAP) for the Aircraft Parking/Wash Rack Area (Site SD05), Wheeler Army Airfield, Oahu, Hawaii, May 22, 2000, CH2M Hill.

32. Final Decision Document to Support No Further Response Action Planned (NFRAP) for the Aircraft Parking Area (Site SD06), Wheeler Army Airfield, Oahu, Hawaii, May 22, 2000, CH2M Hill.

PREVIOUS STUDIES

33. Final Decision Document to Support No Further Response Action Planned (NFRAP) for the Sanitary Sewer System along Santos Dumont Avenue (Site WP07), Wheeler Army Airfield, Oahu, Hawaii, May 22, 2000, CH2M Hill.

34. Final Decision Document to Support No Further Response Action Planned (NFRAP) for the Abandoned Oxidation Ponds (Site WP08), Wheeler Army Airfield, Oahu, Hawaii, May 22, 2000, CH2M Hill.

35. Draft Addendum No.1 to the Final Closure Report, Gulch Runway Dump, DP02; and PCB Sampling Results for Kunia Gate Dump, DP03; and Fire Training Area FT04, Wheeler Army Airfield, Hawaii, December 1, 2000, IT Corporation.

36. Final No Further Response Action Planned Decision Document, Gulch Runway Dump, DP02, Revision1, Wheeler Army Airfield, Oahu, Hawaii, February 28, 2001, IT Corporation.

37. Final Decision Document to Support No Further Response Action Planned (NFRAP) for the Aircraft Parking/Wash Rack Area (Site SD05), Wheeler Army Airfield, Oahu, Hawaii, May 22, 2000, CH2M Hill.

38. Final Decision Document to Support No Further Response Action Planned (NFRAP) for the Aircraft Parking Area (Site SD06), Wheeler Army Airfield, Oahu, Hawaii, May 22, 2000, CH2M Hill.

39. Final Decision Document to Support No Further Response Action Planned (NFRAP) for the Sanitary Sewer System along Santos Dumont Avenue (Site WP07), Wheeler Army Airfield, Oahu, Hawaii, May 22, 2000, CH2M Hill.

40. Final Decision Document to Support No Further Response Action Planned (NFRAP) for the Abandoned Oxidation Ponds (Site WP08), Wheeler Army Airfield, Oahu, Hawaii, May 22, 2000, CH2M Hill.

41. Draft Addendum No.1 to the Final Closure Report, Gulch Runway Dump, DP02; and PCB Sampling Results for Kunia Gate Dump, DP03; and Fire Training Area FT04, Wheeler Army Airfield, Hawaii, December 1, 2000, IT Corporation.

42. Final No Further Response Action Planned Decision Document, Gulch Runway Dump, DP02, Revision1, Wheeler Army Airfield, Oahu, Hawaii, February 28, 2001, IT Corporation.

43. Draft Environmental Baseline Survey for Buildings 1320, 1322, and 1324, Wheeler Segment Control Center, Wheeler Army Airfield, Oahu, Hawaii, September 7, 1998, Tetra Tech, Inc.

44. Final Remediation of Petroleum Contaminated Soil, Site Assessment Report, Excavation of Petroleum Contaminated Soil, Building 218, Wheeler Army Airfield, August 15, 2001, Environmental Chemical Corporation.

45. Soil Screening Survey at Wheeler Army Airfield, July 2001, Environet, Incorporated

UST/AST Sites

1. Final Closure Report, Tank Site 105-1, Wheeler Army Airfield, November 21, 1994, Morrison Knudsen Corporation.

PREVIOUS STUDIES

2. Final Closure Report, Tank Site 107-1, Wheeler Army Airfield, November 21, 1994, Morrison Knudsen Corporation.

3. Final Closure Report, Tank Site 111-1, Wheeler Army Airfield, November 21, 1994, Morrison Knudsen Corporation.

4. Final Closure Report, Tank Site 114-1, Wheeler Army Airfield, November 21, 1994, Morrison Knudsen Corporation.

5. Final Closure Report, Tank Site 208-1, Wheeler Army Airfield, November 21, 1994, Morrison Knudsen Corporation.

6. Final Closure Report, Tank Site 208-2, Wheeler Army Airfield, November 21, 1994, Morrison Knudsen Corporation.

7. Final Closure Report, Tank Site 800-X, Wheeler Army Airfield, November 21, 1994, Morrison Knudsen Corporation.

8. Final Closure Report, Tank Site 108-1 & 108-X, Wheeler Army Airfield, November 25, 1994, Morrison Knudsen Corporation.

9. Final Closure Report, Tank Sites 1004-1, 1004-2, 1004-3 & 1004-4, Wheeler Army Airfield, November 25, 1994, Morrison Knudsen Corporation.

10. Final Closure Report, Tank Site 800-3, Wheeler Army Airfield, November 25, 1994, Morrison Knudsen Corporation.

11. Final Closure Report, Tank Site 1112-1, Wheeler Army Airfield, December 31, 1994, Morrison Knudsen Corporation.

12. Final Closure Report, Tank Site D-1, Wheeler Army Airfield, December 31, 1994, Morrison Knudsen Corporation.

13. Final Closure Report, Underground Storage Tanks WAAF-235-1 and WAAF-235-2, Wheeler Army Airfield, September 26, 1997, Morrison Knudsen Corporation.

14. Final Tank Closure Report and Supplement I to Final Tank Closure Report, Tank Site 111-1, Wheeler Army Airfield, November 14, 1997, EnvironMETeo Services Incorporated.

15. Final Closure Report, Aboveground Storage Tank WAAF-117, Wheeler Army Airfield, August 24, 1998, Morrison Knudsen Corporation.

16. Final Tank Closure Report for Former Waste Oil UST Location Tank Site 111-1, Wheeler Army Airfield, Oahu, Hawaii, May 26, 2000, EnvironMeteo Services Incorporated.

FY2005

Combined Army Facilities - Hawaii

AEDB-R SITES

Fort Shafter

FTSHF-46
FORMER FUEL STATION NEAR USARC, BLDG 1537

SITE DESCRIPTION

The site was a former fueling station and paint spray booth (Building T-1537) located in Area 4 (HLA, 1996) in the southwest corner of Fort Shafter Flats. A review of historical aerial photographs and topographic maps indicates that the gasoline and oil storage tanks were present at the site in 1952 and the structure was built prior to 1969. The buildings and structures, including the tanks, have been demolished and removed, and the area is currently an open field with short grasses and shrubs. SI sampling results show low level TCE groundwater contamination below MCLs. Preliminary RI results indicate high levels of VOCs over a one and a half acre area. Potential human and ecological receptor is Keehi Lagoon.

STATUS

RRSE RATING:
MEDIUM
CONTAMINANTS:
POL, TCE, VOCs, SVOCs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI
FUTURE IRP PHASE:
RD, RA, RAO, LTM

PROPOSED PLAN

Complete the RI to delineate the extent of contamination and perform a supporting Risk Assessment. Due to preliminary RI findings to date, a remedial action, such as a 300 ft long shallow interception trench, may be necessary.

FTSHF-47
FORMER FUELING STATION, BLDG 1593

SITE DESCRIPTION

The site is a former fueling station located near the eastern boundary of Fort Shafter Flats. A review of historical aerial photographs and topographic maps indicates that the structure was built prior to 1950. The UST associated with the fueling station was removed in 1990. There was no indication whether an environmental assessment was performed at the time the UST was removed. The groundwater monitoring well installed at the former fueling station during the PA/SI, PSW-7, could not be located during a site reconnaissance conducted on September 26, 2002. The well was likely removed during construction of Building 1557 in 1996. The PA/SI indicates contamination in the groundwater above the EPA MCLs for TCE.

STATUS

RRSE RATING:
MEDIUM
CONTAMINANTS:
TCE
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete the RI and perform a supporting Risk Assessment. Conduct LTM for 5 years.

FTSHF-48
FORMER LAUNDRY FACILITY, FLATS

SITE DESCRIPTION

The site, Bldg 305, is a former laundry facility in the Fort Shafter Flats area. A review of historical aerial photographs and topographic maps indicates that the structure was built prior to 1950 and demolished prior to 1978. Building 305 was located on the north side of Building 1547. About one-third of the former building would have been in the footprint of Building 1547. The area is currently a paved parking lot with some landscaping. The draft PA/SI report indicated mercury contamination in the groundwater and soil samples indicated the presence of VOCs below action levels.

STATUS

RRSE RATING:
LOW
CONTAMINANTS:
Metals, VOCs
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete the RI and perform a supporting Risk Assessment. Conduct LTM for 5 years.

FTSHF-49
FORMER WAREHOUSE 45

SITE DESCRIPTION

Warehouse 45 is a former warehouse which was also known as Building 1558. The building site is currently covered by the H-1 freeway. However, a monitoring well was placed downgradient of the site on the east corner of Fort Shafter Flats. A review of historical aerial photographs and topographic maps indicates that the structure was built prior to 1950 and was demolished after 1969 and prior to 1978. The location of the former warehouse building is now part of the H-1 Viaduct. No specific information regarding the types of materials stored at the warehouse or potential contaminants were identified. Preliminary RI sampling indicated TCE contamination levels below EPA MCLs in groundwater and pentachlorophenol above EPA MCLs.

STATUS

RRSE RATING:
LOW
CONTAMINANTS:
TCE, Pesticides
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete the RI and perform a supporting Risk Assessment. Conduct LTM for 5 years.

FTSHF-50
FORMER REPAIR SHOP, BLDG 1553

SITE DESCRIPTION

The site is located on the south side (near Middle Street) of what is now the U.S. Army Reserve Center. The former repair shop site which includes former Buildings 1553 and 1567. A review of historical aerial photographs and topographic maps indicates that Building 1553 was built prior to 1950 and was demolished after 1969 and prior to 1978. The former repair shop, Building 1553, overlaps a portion of the southeast corner of the Unit Storage Warehouse (Building 1556), and the south end of the former building extended to what is now a part of the H-1 Viaduct roadway. The location of the former building is now asphalt paved roadways and parking area and some landscaped grounds. The former motor pool repair shop, Building 1567, is also a part of the Building 1553 RI site. SI samples retrieved indicate concentrations of pentachlorophenol above EPA MCLs.

STATUS

RRSE RATING:
MEDIUM
CONTAMINANTS:
Pesticides
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete the RI and perform a supporting Risk Assessment. Conduct LTM for 5 years.

FTSHF-51
WASHRACK T-1539

SITE DESCRIPTION

The site is located south (near Middle Street) of what is now the U.S. Army Reserve Center. The vehicle wash rack, Structure T-1539 in Area 4, consists of a rectangular paved vehicle parking area that is surrounded by a six-inch high asphalt concrete berm. A review of historical aerial photographs and topographic maps indicates that the structure was built prior to 1969. The area around the wash rack and the buildings directly north of the wash rack, T-1533 and T-1354, are being used by a roofing and waterproofing contractor for materials and equipment storage and truck parking. The wash rack is no longer in use, and vegetation is starting to grow in the pavement. Samples retrieved indicate concentrations of arsenic in groundwater just below EPA MCLs. The arsenic concentrations are likely naturally occurring.

STATUS

RRSE RATING:
LOW
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete the RI and perform a supporting Risk Assessment. Conduct LTM for 5 years.

FTSHF-52
FORMER WAREHOUSE (T1542)

SITE DESCRIPTION

The site is located on the southern edge of the of what is now the U.S. Army Reserve Center in Fort Shafter Flats. The warehouse structure (T1542) is no longer present at the site. A review of historical aerial photographs and topographic maps indicates that the structure was built prior to 1950. A portion of the former warehouse building location overlaps the west side of Building 1556, the Unit Storage Warehouse. The location of the former warehouse building is currently a paved driveway and parking area for Building 1556. Samples retrieved indicate presence of semi-volatile organic compounds (SVOCs) and metals.

STATUS

RRSE RATING:
MEDIUM
CONTAMINANTS:
Metals, SVOCs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Complete the RI and perform a supporting Risk Assessment. Conduct LTM for 5 years.

FTSHF-01
BLDG 225, 434 FORMER PEST STG (WSC #20)

SITE DESCRIPTION

U.S. Army Garrison, Hawaii (USAG-HI), Directorate of Public Works (DPW), Bldgs. 225 and 434. Located in the southeastern section of the main post and comprising an area of approximately 500 square feet total. Bldg. 225 was used to store and mix now-banned organochlorine pesticides. Bldg. 434 was reportedly used as a mixing area for pesticides stored at bldg. 225, however the mixing area is paved, therefore no exposure pathways are expected.

During the SI phase, soil samples were collected to be analyzed. Laboratory results showed elevated levels of organochlorine pesticides, principally chlordane. The RI sampling shows extensive contamination throughout the site greater than originally estimated. RA completed, no further remedial action planned.

STATUS

RRSE RATING: NE
CONTAMINANTS:
Pesticides
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RAC
CURRENT IRP PHASE:
RC - 1998

FTSHF-02
BLDG 725 PESTICIDE STG (WSC #17)

SITE DESCRIPTION

USAG-HI, Directorate of Community Activities (DCA), Golf Association, Bldg. 725. Building 725 is located on the grounds of the Fort Shafter's Nagorski Golf Course and serves as the primary grounds maintenance headquarters for the golf course. A fenced area approximately 50 feet south of building 725 was formerly used for pesticides and herbicides storage. Soil samples were collected from this area to determine potential contamination of herbicides and pesticides. Laboratory results showed levels of target herbicides and pesticides; however, these levels are well below the EPA's action level for herbicides and pesticides in soil.

STATUS

RRSE RATING: NE
CONTAMINANTS:
Pesticides
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1994

FTSHF-03
SHAFTER FLATS VEH MAINT BLDG 1515/1519

SITE DESCRIPTION

Bldgs. 1515/1519 were constructed in the early 1940s. Bldg 1519 and the former bldg. 1515 (demolished, date unknown) are located in the central section of Fort Shafter Flats. Bldg. 1515 was used as a mobile radar maintenance facility and bldg. 1519 as a motor pool. USAG-HI currently operates a motor pool at bldg. 1519. The draft PA/SI report does not recommend additional work at this site.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1996

FTSHF-04
VEHICLE MAINT BLDG 345 (WSC #19)

SITE DESCRIPTION

USAG-HI, DPW, Bldg. 345 was constructed in 1958. Bldg. 345 is located in the southeastern section of the main post. Formerly used for vehicle maintenance where solvents were used and waste POL products generated. In 1990, a PA was completed. Field visits to the site and communication with employees at the facility indicated that there was no evidence of a past release due to past use. Past disposal practice included collection at a central station on the post with later removal through the Defense Re-utilization and Marketing Region's system.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL, Solvents

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1992

FTSHF-06
AUTOCRAFT SHOP (WSC #2)

SITE DESCRIPTION

USAG-HI, Bldg 1535 is located in the central section of Fort Shafter Flats. The Autocraft shop is currently used by military personnel for maintenance of personal vehicles.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL, Solvents

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1996

FTSHF-07
VEHICLE WASH AREA AT FSACS (WSC #3)

SITE DESCRIPTION

Site is adjacent to the Automotive Craft Shop, Bldg. 1535 located in the central section of Fort Shafter Flats. The facility is essentially an open shed with concrete pad area 25 feet x 120 feet. Possibility of soil contamination stemming from past practice of the facility when waste waters generated from washing vehicles was drained directly into the grassed area. Potential contamination is marked by a 2 foot square stained area. The draft PA/SI report does not indicate contamination at the site.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL

MEDIA F CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1996

FTSHF-08
CAR CARE CENTER , BLDG 1528

SITE DESCRIPTION

USAG-HI, Bldg. 1528 is located in the central section of Fort Shafter Flats. The Car Care Center is a contractor-operated vehicle maintenance shop. It is currently used by military and Army employed civilian personnel for maintenance of personal vehicles. Waste storage and disposal procedures pose no substantial threat to human health or the environment (AEHA, 1994). POL contaminants remain after UST removal at site. Risk evaluation to be accomplished prior to start of any remedial action. Same location as FTSHF-42.

This site is not in AEDB-R.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL, Solvents

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE: RC

FTSHF-09
VEH WASH AREA NR T1521 & T1522 (WSC #5)

SITE DESCRIPTION

The site includes a washrack used for cleaning engines and vehicles. The washrack is located inside the building and is connected to an oil/water separator.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1993

FTSHF-10
VETERINARY CLINIC (WSC #6)

SITE DESCRIPTION

The veterinary clinic is in bldg. T-1521 located in the central section of Fort Shafter Flats. The building has concrete floors without drains. Wastes are well managed and there is no potential threat to human health or the environment (AEHA, 1994).

STATUS

RRSE RATING: NE

CONTAMINANTS:
Acids, Solvents

MEDIA OF CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1996

FTSHF-11
PHOTO LAB (BLDG 1500) (WSC #7)

SITE DESCRIPTION

The photo lab is in bldg. T-1500 located in the north central section of Fort Shafter Flats. Small quantities of developing and stabilizing solutions are diluted and poured down the drain. Waste fixers are picked up for disposal. Wastes are well managed and there is no potential threat to human health or the environment (AEHA, 1994).

STATUS

RRSE RATING: NE

CONTAMINANTS:
Acid, Fixers

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1996

FTSHF-12
ARTS AND CRAFTS CENTER (WSC #8)

SITE DESCRIPTION

The arts and crafts center is in bldg. 339 located in the southeastern section of the main post. A variety of crafts were taught including furniture refinishing and stained glass. The floor is concrete without drains. Chemicals used include small quantities of paint, paint thinner, furniture stripper, and denatured alcohol. Any spill would be contained in the building. There is no threat to human health or the environment (AEHA, 1994).

STATUS

RRSE RATING: NE

CONTAMINANTS:
Paints, Solvents

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1990

FTSHF-13
MAINTENANCE AREA IN 400 BLOCK-6 (WSC #9)

SITE DESCRIPTION

Bldg. 405 is located in the southeastern section of the main post. The building. functions as the 29th Battalion's maintenance area. Waste POL and solvents are generated, however, past waste disposal and storage practices and visual inspections of the area do not indicate any evidence of release.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL, Solvents

MEDIA OF CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1992

FTSHF-14
VEHICLE WASH AREA NR BLDG 405 (WSC #10)

SITE DESCRIPTION

The wash area is adjacent to bldg. 405 located in the southeastern section of the main post. The wash area is part of the overall complex of the 29th Engineer Battalion's maintenance and storage facility. It is an open pad without containment curbs. Wash waters are allowed to drain over the pavement into a stream down slope of the wash area. There is indication of possible past petroleum spills as evidenced by minor stains in the pavement, but it appears that apparent efforts have been made to clean up after any incidents. Laboratory analysis of the sediments from stream showed low levels of lead and oil. Gasoline-range and Diesel-range petroleum hydrocarbons were not detected.

STATUS

RRSE RATING: NE
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1994

FTSHF-15
USTS-USASCH MAINTN AREA, BLDG 422 (WSC #11)

SITE DESCRIPTION

There were two USTs in the vicinity of bldg. 420 located in the southeastern section of the main post. The tanks were 1,000 gallon diesel storage tanks which were removed about two years ago because they were no longer needed. The associated contaminated soil was excavated and thermally treated as the remedial action.

STATUS

RRSE RATING: NE
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RA, IRA
CURRENT IRP PHASE:
RC - 1996

FTSHF-16
VEHICLE WASH AREA NR BLDG 420 (WSC #12)

SITE DESCRIPTION

USAG-HI, DPW wash area adjacent to bldg. 420 located in the south-eastern section of the main post. This wash facility is equipped with appropriate curbing, drain , and piping into the sanitary sewer system. Research of past practice indicates the use of an adjacent paved area for washing road sweeping equipment, which resulted in visible stains and potential contamination of the site. The soils and debris accumulated on the open pavement were collected and analyzed. Laboratory results showed very low level of lead and heavy oil. Total petroleum hydrocarbons as gas and diesel were not detected.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1994

FTSHF-17
USASCH MAINTEN AREA AT BLDG 420 (WSC #13)

SITE DESCRIPTION

USAG-HI, DPW bldg. 420 is located in the southeastern section of the main post. This building and surrounding area is currently used as a motor pool. The shop has a concrete floor with drains that lead into an oil/water separator. New oil, solvents, and antifreeze are stored outside next to the building. Waste oil and waste solvents are stored in 55-gallon drums besides the building. The storage area has no secondary containment. There are small stains on the pavement. Although this facility is currently in operation, poor waste handling and storage practices indicate high potential for release in the past due to unrelated activities. A PA/SI is currently underway

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1996

FTSHF-18
FLAM MATLS STG (BLDG 346, 347) (WSC #14)

SITE DESCRIPTION

USAG-HI, DPW operated a storage area between bldgs. 346 and 347 located in the southeastern section of the main post. Used flammable material and other hazardous materials were stored in a small open area between the buildings. Inadequate storage facilities observed as part of current observations. However, there is no evidence of contamination due to past practices.

STATUS

RRSE RATING: NE

CONTAMINANTS:
Flammables

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1992

FTSHF-19
DENTAL CLINIC (WSC #15)

SITE DESCRIPTION

A small dental clinic within bldg. 521 is located in the central section of the main post. No drains, all wastes discharged to sanitary sewer. Storage and handling of hazardous material is in accordance with standard practices (AEHA, 1994). Access was denied during the AEHA assessment, however, this is currently an operating facility and associated past practices do not indicate a threat to human health or the environment.

STATUS

RRSE RATING: NE

CONTAMINANTS:
Flammables

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1990

FTSHF-20
USTS AT BLDG 535 (SERVICE STAT) (WSC #16)

SITE DESCRIPTION

A 500-gallon UST at bldg. 535 is located in the northern section of the main post. The UST was removed in FY94. No future remedial action is proposed

STATUS

RRSE RATING: NE

CONTAMINANTS:

POL, Heavy Metals

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED I**RP PHASE:**

PA, RA

CURRENT IRP PHASE:

RC - 1994

FTSHF-21
TRANSFORMER STG AREA (WSC #18)

SITE DESCRIPTION

USAG-HI, DPW warehouse, bldg. 347 is located in the southeastern section of the main post. The area is open to the environment with asphalt floors, enclosed by chain link fence and metal roofing. Reportedly, all units are non-PC, however, not all units were labeled with regard to PCB content. Ten 55-gallon drums of transformer oil were found awaiting disposal. No further response (AEHA, 1994). However, construction of the storage facility and current waste handling practices indicate a potential for a release due to past practices. A PA/SI is currently underway.

STATUS

RRSE RATING: NE

CONTAMINANTS:

PCBs

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA

CURRENT IRP PHASE:

RC - 1990

FTSHF-22
FORMER HERBICIDE STG BLDG 310 (WSC #21)

SITE DESCRIPTION

Currently occupied by the USAG-HI, DPW Housing Section, bldg. 310 is located in the southeastern section of the main post. From 1960-1975, USAG-HI, DPW stored small quantities of herbicides, primarily, "Roundup." There is no evidence of past contamination.

STATUS

RRSE RATING: NE

CONTAMINANTS:
Herbicides

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1994

FTSHF-23
PAINT/PLATING BLDG 1507-WING A (WSC #22)

SITE DESCRIPTION

Bldg. 1507 is located in the central section of Fort Shafter Flats. The building was formerly used for electronic repair, painting, and plating. The plating shop has not been in function for many years, but the abandoned sump associated with the floor drainage of the plating shop was the subject for the Site Investigation. The sediment inside the sump was tested for Toxicity and Characteristics Leaching Potential (TCLP) semivolatiles and metals. Laboratory results showed elevated levels of TCLP semivolatiles and metals.

STATUS

RRSE RATING: NE

CONTAMINANTS:
Semi-volatiles, Metals

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, RA

CURRENT IRP PHASE:
RC - 1998

FTSHF-24
PHOTOGRAPHY LABS (435, 1290, 1292) (WSC #23)

SITE DESCRIPTION

Bldgs. 435 and 1290 are located in the southeastern and northern section of the main post. Bldg. 435: USATHAMA Property Report suggested that this building was formerly used for photographic purposes and that spent photographic chemicals were dumped on site. However, no evidence of this was found to support this. No further action recommended. Bldg. 1290 was the access to Tunnel 1292 where photographic laboratories were located during World War II. The dark room facility is connected to the sanitary sewer, and it is assumed that the sump used for chemical disposal was the storm drain inlet at the rear entry to the tunnel. During the SI, sediment samples were collected at the outlet of the drain pipe. Target analyses were not detected.

STATUS

RRSE RATING: NE

CONTAMINANTS:
Photographic Processing Chemicals

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1994

FTSHF-25
STORMWATER RUNOFF AREA (WSC #24)

SITE DESCRIPTION

The stormwater runoff area is adjacent to Bldg. 346 located in the southeastern section of the main post. Bldg. 346 was used by the Hawaiian Ordnance Depot as storage for pesticides, solvents, and lawn equipment. The stormwater runoff area associated with bldg.346 is a depressed grassed area on the north side of the building approximately 25 feet by 60 feet. During the SI phase, soil samples were collected and tested for pesticides and petroleum products. No elevated levels of contamination found.

STATUS

RRSE RATING: NE

CONTAMINANTS:
Pesticides, Paints, Solvents

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1992

FTSHF-26
LIFT STATION AT BLDG 1605 (WSC #25)

SITE DESCRIPTION

The site is a pumping station that serves to transfer sewage generated on Fort Shafter to the municipal sewage treatment plant on Sand Island. No treatment is conducted at this site and no chemicals are stored or used. (AEHA, 1994)

STATUS

RRSE RATING: NE
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA
CURRENT IRP PHASE:
RC - 1990

FTSHF-27
DUMP SITE (WSC #26)

SITE DESCRIPTION

The Dump Site is located in the western section of Fort Shafter Flats. it covers an area of approximately 2 acres. Much of the debris is from Hurricane Iwa (November 21, 1982). There is no burial of waste material, therefore this site is not a landfill (AEHA, 1994). part of the site was cleared and used as a temporary storage for POL contaminated soil from USTs. A liner was placed to prevent contamination migration. The soil was scheduled for thermal treatment in FY95 and has since been re-moved from the site. Results from SI show no threat to human health or the environment provided land use remains the same.

STATUS

RRSE RATING: NE
CONTAMINANTS:
Heavy Metals, POL
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1997

FTSHF-28
WATER TREATMENT LAB (WSC #27)

SITE DESCRIPTION

The site is located at bldg 509/510 and is currently used for treatment of drinking water utilized on Fort Shafter. There was no evidence to indicate that hazardous materials or wastes had been released at the site.

STATUS

RRSE RATING: NE

CONTAMINANTS:
Chlorine Powder

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1990

FTSHF-29
WATER TREATMENT PLANT AT 511 (WSC #28)

SITE DESCRIPTION

Bldg. 509 was mistaken to be bldg. 511 in the USATHAMA Property Report. USAG-HI, DPW bldg. 509 is located in the central section of the main post. Water is treated with chlorine gas (no evidence of past use with chlorine powder) in bldg. 509. No other chemicals are stored. There is no threat of environmental contamination (AEHA, 1994).

STATUS

RRSE RATING: NE

CONTAMINANTS:
Chlorine Powder

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1990

FTSHF-30
INDOOR FIRING RANGE (WSC #29)

SITE DESCRIPTION

No information on this site was found during the AEHA PA. Personnel at Fort Shafter were not aware of the firing range. An indoor firing range would have been self contained, therefore, there is no reason to suspect any environmental contamination. No further investigation is needed (AEHA, 1994).

STATUS

RRSE RATING: NE

CONTAMINANTS:
Lead

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RC - 1990

FTSHF-32
POL-CONTAMINATED SOIL

SITE DESCRIPTION

Remediation of POL contaminated soil from various LUST which had been stockpiled at Ft. Shafter. The soil was scheduled for thermal treatment on Oahu. However, confirmatory sampling of the stockpiled soil showed that natural attenuation had occurred while the soil was stockpiled awaiting treatment.

Tbis site is not in AEDB-R.

STATUS

RRSE RATING: NE

CONTAMINANTS:
POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, RFI

CURRENT IRP PHASE:
RC

FTSHF-33
USARC BLDG A, FT SHAFTER FLATS UST SITE

SITE DESCRIPTION

A LUST that was removed prior to the construction of the Army Reserve Center located in the eastern section of Fort Shafter Flats. Soil and groundwater contamination found. The HHRA that was performed indicated low risk to human health and the environment. No further action planned.

STATUS

RRSE RATING: NE

CONTAMINANTS: POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, 2 IRAS

CURRENT IRP PHASE:

RC - 1993

FTSHF-34, 35, 36, 37, 38, 39, 41, 43
USTS AT BLDGS 310, 320, 430, 508, 507, 520, 1500 &1535

SITE DESCRIPTION

Remove inactive/abandoned USTs at various sites at Fort Shafter and Fort Shafter Flats.

STATUS

RRSE RATING: NE

CONTAMINANTS:

POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA, RA

CURRENT IRP PHASE:

RC - 1994

FTSHF-42
UST BLDG 1528

SITE DESCRIPTION

A LUST was removed from the car care center located in the western section of Fort Shafter Flats. Soil and groundwater contamination found. Risk evaluation will be done prior to any further remedial action. Site is at the same location as FTSHF-08.

STATUS

RRSE RATING: Low

CONTAMINANTS:
POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA, IRA, RA

CURRENT IRP PHASE:
RC - 2000

Kunia Military Reservation

FSK-01
LUST REMEDIATION (305K GAL TK)

SITE DESCRIPTION

The Kunia Military Reservation site is located in the southwestern portion of the installation next to the cooling towers. The concrete steel reinforced tank was formerly used to supply diesel fuel to generators for the tunnel facility. The tank was removed in 1994 and thermally treated. Limited excavations to seven feet below tank bottom were conducted in 1995 with soil removed also being thermally treated. TPH-diesel contamination found at level (39,000 mg/kg) above DOH Tier 1 SAL (5,000 mg/kg) appears down to 170 bgs. Only one sample at 150 ft bgs contained benzene at a 0.070 mg/kg which exceeds DOH Tier 1 SAL of 0.05mg/kg. Groundwater at site is approximately 600 ft bgs. The contract to cap the site was awarded in 2002.

STATUS

RRSE RATING:
MEDIUM
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS, IRA (2)
CURRENT IRP PHASE:
RAC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

Install the cap (FY04) and request no further remedial action.

FSK-02
BLDG 25, PCB CONTAMINATION

SITE DESCRIPTION

This Kunia Military Reservation site is located in the northern section of the installation near the main entrance to the facility. This area was the site of the reported application of POL product (with PCBs) on to the ground surface for dust control. The site is presently covered with either asphalt (parking lot) or grout (drainage channel). Based upon the results of the SI, there is no pathway to receptors nor are there any levels of contamination that present a threat to human health or the environment. No further remedial actions are planned for this site under the restoration program.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
PCB
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1996

PROPOSED PLAN

Based on the data obtained during the SI phase, no further remedial action is planned for this site under the restoration program.

FSK-03
MICROWAVE TOWER

SITE DESCRIPTION

This Kunia Military Reservation site is located in the southern section of the installation. The site is located in the midst of cooling towers, microwave antennas, exhaust and intake ports for the tunnel operations. This portion of the installation is surrounded by agricultural lands (pineapple fields) operated by Del Monte Fresh Produce, Hawaii. Based on results of the SI and the subsequent follow-up sampling, there are no contaminants present that exceed regulatory levels.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
POL, VOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1996

PROPOSED PLAN

No contamination exists above regulatory levels. No further remedial action is planned at this site under the restoration program.

Schofield Barracks

OPERABLE UNITS

In order to prioritize the investigation and remediation activities at SB, the installation restoration program was developed around four operable units (OUs). Operable Unit One consists of suspected sources of trichloroethylene (TCE) contamination. Operable Unit Two is the contaminated groundwater system underlying the sub-installation. Operable Unit Four consists of the former Schofield Barracks Landfill (AEDB-R SCHBR-12). Operable Unit Three consists of all other hazardous waste sites identified on the sub-installation. The program was conducted in three phases to address the most critical problem first (TCE contamination) and follow-up on less critical hazardous waste sites on the sub-installation.

OU1
TCE SOURCES

SITE DESCRIPTION

The sites included in OU 1 all have been identified with use and/or storage of TCE or other solvents through the 1990 study conducted by USATHAMA to identify hazardous waste operations at Army properties (Weston, 1990). The RI/FS Work Plan for Schofield Barracks was completed in June 1992 and approved by the EPA in January 1993 and field work was conducted from March through September 1993. The RI investigation concluded that none of the OU 1 sites are sources of the TCE groundwater contamination. Preliminary assessment and site investigation of potential TCE sources on Wheeler AAF conducted from October 1993 through July 1994 also identified no sources of TCE. A No Further Action Record of Decision was signed by the Army and EPA in November 1995 and January 1996 respectively. The AEDB-R sites included in OU 1 are:

SCHBR-01	Firing Range Burning Areas (RRSE - NFRAP)
SCHBR-07	Area R. Waste Storage Area (POL Area) (RRSE - NFRAP)
SCHBR-16	East Range Disposal Site (RRSE - NFRAP)
SCHBR-17	Former Laundry (Old Laundry) (RRSE - NFRAP)
SCHBR-30	Maintenance Area (Bldg T-1029 Area) (RRSE - NFRAP)
SCHBR-31	Distribution Warehouse (T-1052) (RRSE - NFRAP)
SCHBR-37	Autocraft Shop (Bldg 910) (RRSE - NFRAP)
SCHBR-51	Maintenance Area (RRSE - NFRAP)
SCHBR-56	Aircraft Fuselage Area (RRSE - NFRAP)
SCHBR-87	Aircraft Storage Bunkers (RRSE - NFRAP)
SCHBR-88	Engine Rebuild Area (RRSE - NFRAP)

STATUS

RRSE RATING:
NE

CONTAMINANTS:
TCE

MEDIA OF CONCERN:
Groundwater

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RC - 1995 OR BEFORE

OU2 - SCHBR-19 (PAGE 1 OF 2)
WELLSHAFT #4 GW TRMT SYST (GAC)(FFA 53)

SITE DESCRIPTION

Operable Unit 2, while not specifically addressing hazardous waste sites, addresses the impacts of Schofield Barracks operations on the groundwater. The discovery of TCE in the water supply wells at SB was the primary factor used to place SB on the NPL, based on the contamination of a primary drinking water source. Schofield Barracks overlies the Schofield High Level Water Body which, combined with the Honolulu-Pearl Harbor Basal Water Body into which 80 percent of the Schofield Aquifer flows, is the main fresh water source for the island of Oahu. Operable Unit 2 consists of the groundwater beneath Schofield Barracks, as represented by the following AEDB-R site: SCHBR-19 Wellshaft #4, Groundwater Treatment System, (GAC)(FFA 53).

STATUS

RRSE RATING:
High
CONTAMINANTS:
TCE
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
LTM
FUTURE IRP PHASE:
LTM

Investigation of groundwater contamination of SB was initiated in 1985 when levels of TCE above the Safe Drinking Water Act (SDWA) Maximum Contaminant Level (MCL) of 5 ppb were first detected. Initial investigations were limited to the SB Water Supply wells and resulted in the installation of an air stripping treatment system at the supply wells. The air stripper began operation in September 1986 and treats approximately five million gallons of water per day. Based upon an average TCE concentration in the groundwater, approximately 55 gallons of pure TCE are removed from the groundwater each year with the air stripper. Observations of well concentration data have determined that well #4 has the highest levels of TCE (30 to 40 ppb) and the concentrations in the 3 remaining wells tend to rise when well #4 is shut down. Based upon the location of well #4, the TCE plume has been projected to lie to the east and south of the SB Water Supply wells.

Under the IR program PA/SI effort conducted in FY92, a well survey was conducted for the area surrounding SB. The survey identified 39 wells within a 6-mile radius of the SB wells. Of these, 10 were randomly selected for sampling for volatile organics. One well west of Wheeler Army Airfield showed levels of TCE of 5.3 ppb; all others were below detection. Of the 39 wells only 14 are within the Schofield High Level Water Body; four of which are owned by DOD, six are irrigation wells for Dole and Del Monte and four are municipal wells (Wahiawa water supply wells). The PA/SI sampling results indicate that TCE is found only in the Schofield supply wells and wells at Kunia on the west side of Wheeler AAF.

Workplans for Phase II RI field investigations were completed and approved in September 1994 and fieldwork was conducted from October 1994 to August 1995. The Phase II RI investigations focused on collecting data to support the implementation of a point-of-use treatment approach for the final groundwater remedy. Under this approach the Army will monitor surrounding wells and treat groundwater only where it is pumped and used. No active pump and treat system will be installed based on technical and economic impracticability. The draft final Phase II RI report was submitted to the regulatory agencies in April 1996. The FS, which evaluates a full range of wellhead treatment alternatives, was completed in May 1996. A proposed plan to continue treatment at the Schofield Barracks Water Plant, monitor wells in the area for any migration of the TCE plume, and to install wellhead treatment at any municipal well that are impacted, was distributed to the public in May 1996. The resulting Record of Decision was signed by the Army, the Hawaii Department of Health, and the EPA in September 1996, November 1996, and February 1997, respectively.

OU2 - SCHBR-19 (PAGE 2 OF 2)
WELLSHAFT #4 GW TRMT SYST (GAC)(FFA 53)

SITE DESCRIPTION

The low levels of TCE at the Kunia well did rise above the 5 ug/L level in May 1997 and again in May 2000 prompting the Army to take action. Del Monte Fresh Produce Hawaii, Incorporated had previously installed an air stripping tower on the drinking water system in 1990. In accordance with the OU 2 ROD, the Army reimbursed the capital cost of the treatment facility to Del Monte and is currently funding the operation and maintenance of that treatment facility to safeguard the health of people living and working at Kunia. As a part of this operation and maintenance of the water treatment facility, the Army funded the replacement of the deteriorated blower assembly.

PROPOSED PLAN

Monitor municipal and irrigation wells downgradient of Schofield Barracks and to take action to treat contaminated water where it is used as a drinking water source (well head treatment). Standard pump-and-treat technology is not feasible for this sub-installation. The approved ROD requires installation of a well-head treatment system at downgradient potable water sources should the TCE levels rise to predetermined levels.

MISCELLANEOUS SITES

SITE DESCRIPTION

Under the Federal Facility Agreement the EPA has required that the Army investigate all potential generators and accumulators of hazardous waste within the boundaries of Schofield Barracks. Operating procedures in place at SB require waste generators to limit waste accumulation to less than 90 days and provide for disposal through the Defense Reutilization and marketing Office. Under these procedures, SB is not required to obtain RCRA permits for its operations. Therefore, the normal procedure of conducting RCRA Facility Assessments/Investigations (RFA/RFI) and required RCRA Corrective Measures Study/Actions is not applicable to sub-installation activities. Under RCRA/CERCLA integration requirements of the National Contingency Plan (NCP), investigation of these sites was required under the FFA but given a low priority in the program strategy.

STATUS

RRSE RATING:
NE

CONTAMINANTS:
Metals, POLs, VOCs, SVOCs, Pesticides, PCBs

MEDIA OF CONCERN:
Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI, RI/FS, RA

CURRENT IRP PHASE:
RC - 2001 OR BEFORE

Prior to establishment of Operable Unit 3, only the 1990 USATHAMA Hazardous Waste Site Property Report (Weston, 1990) had investigated the OU 3 sites. This study provided a preliminary assessment of each of the sites based on quantities of chemicals used and/or stored, current site conditions and proximity to receptors. Preliminary assessment scoring was conducted for each of the sites based on these parameters. This report formed the basis for the hazardous waste site list incorporated into the SB FFA. Subsequently, the USEPA requested the inclusion of 37 additional sites into OU 3 based on an EPIC aerial photography survey of Schofield Barracks. The Defense Site Environmental Restoration Tracking System (DSERTS) database was revised to include all sites investigated under OU 3. Sites included in OU 3 range from landfills and firing ranges to motor pools and maintenance areas to pesticide storage buildings and photographic operations. The complete list of DSERTS sites included in OU 3 is provided below:

Site	Description	RRSE
SCHBR-02	DFE Entomology - Bldg 368 (FFA 38)	NFRAP
SCHBR-03	DFE Land Mgmt Branch Bldg 379 (FFA 39)	NFRAP
SCHBR-04	Behind Bldg 379 Wash Rack (FFA 39)	NFRAP
SCHBR-05	DPCA Golf Course Bldg 6019 (FFA 37)	NFRAP
SCHBR-06	Adj to Bldg 6019 Concert Apron (FFA 37)	NFRAP
SCHBR-09	Bldg T-2140 Spray Paint Booth (FFA 45)	NFRAP
SCHBR-13	STP No Bypass Provisions (FFA 15)	NFRAP
SCHBR-15	Central Ranges (FFA 15)	NFRAP
SCHBR-18	Acid Pit (FFA 46)	NFRAP
SCHBR-20	Drum Storage Area (FFA 1)	NFRAP
SCHBR-21	Vehicle Scrap Yard (FFA 2)	NFRAP
SCHBR-26	TASC (Bldg 2061) (FFA 9)	NFRAP
SCHBR 27	Bldg T-1125 Target Shop (FFA 10)	NFRAP
SCHBR-28	Bldg T-2276 (FFA 12)	NFRAP
SCHBR-29	Bldg 2275 Repair/Carpentry Shop (FFA 16)	NFRAP
SCHBR-32	Battery Shop (Bldg T-1081) (FFA 19)	NFRAP
SCHBR-33	Pest Control Shop (Bldg 370/380) (FFA 21)	NFRAP
SCHBR-34	Pest Control Shop (FFA 22)	NFRAP
SCHBR-35	Arts and Crafts (Bldg 585) (FFA 23)	NFRAP
SCHBR-36	Autocraft Car Wash (Bldg 910) (FFA 24)	NFRAP
SCHBR-38	Car Care (Bldg 79) (FFA 26)	NFRAP

SITE DESCRIPTION

SCHBR-39	Veterinary Clinic (FFA 27)	NFRAP
SCHBR-40	Health Clinic (FFA 28)	NFRAP
SCHBR-41	Incinerator (Bldg 673) (FFA 29)	NFRAP
SCHBR-42	Former Service Station/5 USTs (FFA 30)	NFRAP
SCHBR-43	Dental Clinic (FFA 31)	NFRAP
SCHBR-44	24-Hour Photo Service (FFA 32)	NFRAP
SCHBR-45	Maintenance Areas (Bldg T-2054, -2060) (FFA 33)	NFRAP
SCHBR-46	Weapons Maintenance (Bldg 2131) (FFA 34)	NFRAP
SCHBR-47	Optical Repair (Bldg 1054) (FFA 35)	NFRAP
SCHBR-48	Gas Chamber (Bldg 2253C) (FFA 36)	NFRAP
SCHBR-49	Transformers (9) (FFA 40)	NFRAP
SCHBR-50	Transformer Leak Area (FFA 41)	NFRAP
SCHBR-52	Ammo Storage Bunkers (FFA 43)	NFRAP
SCHBR-53	Chem Impreg Plant (Bldg 2308) (FFA 44)	NFRAP
SCHBR-54	Photo Operations (Bldg 2308) (FFA 47)	NFRAP
SCHBR-55	Bldg 370B Industrial Operations (FFA 48)	NFRAP
SCHBR-57	Tunnels (3) (FFA 55)	NFRAP
SCHBR-58	Landfill 3 Various Locations (FFA 49)	NFRAP
SCHBR-60	Maintenance Area A (FFA 3)	NFRAP
SCHBR-61	Maintenance Area B (FFA 3/11)	NFRAP
SCHBR-62	Maintenance Area C (FFA 3/11)	NFRAP
SCHBR-63	Maintenance Area D (FFA 3/11)	NFRAP
SCHBR-64	Maintenance Area E (FFA 3/6)	NFRAP
SCHBR-65	Maintenance Area F (FFA 3/11)	NFRAP
SCHBR-66	Maintenance Area G (FFA 3/11)	NFRAP
SCHBR-67	Maintenance Area H (FFA 3)	NFRAP
SCHBR-68	Maintenance Area I (FFA 3/11)	NFRAP
SCHBR-69	Maintenance Area J (FFA 3/6)	NFRAP
SCHBR-70	Maintenance Area K (FFA 3/11)	NFRAP
SCHBR-71	Maintenance Area L (FFA 3/11)	NFRAP
SCHBR-72	Maintenance Area M (FFA 3/11)	NFRAP
SCHBR-73	Maintenance Area N (FFA 3/11)	NFRAP
SCHBR-74	Maintenance Area O (FFA 3/6/11)	NFRAP
SCHBR-75	Maintenance Area P (FFA 3/11)	NFRAP
SCHBR-76	Maintenance Area Q (FFA 3/11)	NFRAP
SCHBR-77	Maintenance Area R (FFA 3/11)	NFRAP
SCHBR-78	Maintenance Area S (FFA 3/11)	NFRAP
SCHBR-79	Maintenance Area T (FFA 3/11)	NFRAP
SCHBR-80	Maintenance Area U (FFA 3/11)	NFRAP
SCHBR-81	Maintenance Area V (FFA 3)	NFRAP
SCHBR-82	Maintenance Area W (FFA 3/6)	NFRAP
SCHBR-83	Maintenance Area X (FFA 3/11)	NFRAP
SCHBR-84	McCarthy Flats Ranges (FFA 13)	NFRAP
SCHBR-85	Kolekole Firing Ranges(FFA 14)	NFRAP
SCHBR-86	Transformer Storage Area (FFA 40)	NFRAP
SCHBR-89	Pits (FFA 57)	NFRAP
SCHBR-90	Possible Waste Disposal (1944) (FFA 58)	NFRAP

SITE DESCRIPTION

SCHBR-91	Two Trenches (1942) (FFA 59)	NFRAP
SCHBR-92	Treatment Plant (1953) (FFA 60)	NFRAP
SCHBR-93	Trench & Pit w/Liquid (1953-77) (FFA 61)	NFRAP
SCHBR-94	Four Trenches (1962) (FFA 62)	NFRAP
SCHBR-95	Three Pits w/Light Material (FFA 63)	NFRAP
SCHBR-96	Pits (1962) (FFA 64A)	NFRAP
SCHBR-97	Stains/Open Storage Area (1942) (FFA 65)	NFRAP
SCHBR-98	Possible Refuse (1942) (FFA 66)	NFRAP
SCHBR-99	Treatment Plant (1953) (FFA 67)	NFRAP
SCHBR-100	Dark Stained Areas (1942) (FFA 68)	NFRAP
SCHBR-101	Open Storage Areas (1942-1953) (FFA 69)	NFRAP
SCHBR-102	Open Storage Area (1942-47 & 1968) (FFA 70)	NFRAP
SCHBR-103	Open Storage Area (1955) (FFA 71)	NFRAP
SCHBR-104	Open Storage Area (Bldg 368) (1942) (FFA 72A)	NFRAP
SCHBR-105	Motor Pool (1942) (FFA 73)	NFRAP
SCHBR-106	Open Storage Area (1977) (FFA 74)	NFRAP
SCHBR-107	Probable Containers/OS (1950-1951) (FFA 75)	NFRAP
SCHBR-108	Light Object/Open Burning (1942) (FFA 76)	NFRAP
SCHBR-109	Light & Med Tone Objects (1942) (FFA 77)	NFRAP
SCHBR-110	Open Storage Areas (1942) (FFA 78)	NFRAP
SCHBR-111	Light Tone Objects (1942) (FFA 79)	NFRAP
SCHBR-112	Possible Trench (FFA 82)	NFRAP
SCHBR-113	Industrial Ops/Open Storage (1942) (FFA 81A)	NFRAP
SCHBR-114	Trench (FFA 82)	NFRAP
SCHBR-115	Open Storage/Motor Pool (FFA 83)	NFRAP
SCHBR-116	Open Storage/Motor Pool (FFA 84)	NFRAP
SCHBR-117	Open Storage/Motor Pool (FFA 85)	NFRAP
SCHBR-118	Open Storage/Motor Pool (FFA 86)	NFRAP
SCHBR-119	Open Storage/Motor Pool (1950-59) (FFA 87)	NFRAP
SCHBR-120	Motor Pool (1955-78) (FFA 88)	NFRAP
SCHBR-121	Open Storage/Possible Pits (1951-59) (FFA 89)	NFRAP
SCHBR-122	Motor Pool/Dark Stains (1959-70) (FFA 90)	NFRAP
SCHBR-123	Refuse (1942) (FFA 91)	NFRAP
SCHBR-124	Open Storage (1950) (FFA 92)	NFRAP
SCHBR-125	Open Fire (1951) (FFA 93)	NFRAP
SCHBR-126	Quad B USTs	NFRAP
SCHBR-127	Quad E USTs	NFRAP
SCHBR-128	Quad F USTs	NFRAP
SCHBR-129	Bldg 665 USTs	NFRAP
SCHBR-130	Health Clinic USTs	NFRAP
SCHBR-131	Quad I UST	NFRAP
SCHBR-132	Quad J UST	NFRAP
SCHBR-133	Two Pits (1962) (FFA 64B)	NFRAP
SCHBR-134	Maintenance Area, Bldg 368 (FFA 72B)	NFRAP
SCHBR-135	Industrial Ops/Open Storage (1942) (FFA 81B)	NFRAP

SITE DESCRIPTION

The Preliminary Assessment of the OU 3 sites listed above was completed in two parts. The first 66 sites were investigated from May through August 1992, culminating in a work plan outlining the Army's proposal to limit further investigation of these sites and move forward with remedial actions through an "investigation-by-excavation" (IBE). Upon review of the draft PA Report, the EPA identified 37 additional sites to be investigated. Also included within the OU 3 are seven UST sites not included in the FFA. The OU 3 PA was completed in January 1994 following preliminary assessment of the new sites conducted from July through September 1993. Based on the PA and after further consultation between the Army and EPA, an RI was performed on the 34 sites requiring further investigation. The RI identified organic compounds and metals that were present above background concentrations in soil and/or surface water at a number of the OU 3 sites. The most commonly identified chemicals were POLs and metals. Other constituents detected at the OU 3 sites include volatiles, semi-volatiles, pesticides, and PCBs. Remedial actions are under way at four former UST sites to mitigate POL releases in accordance with guidance from the DOH-UST office.

Although constituents were identified above background levels, the risk assessment concluded that there was no significant current or potential threat to human health or the environment. The risk estimates for the chemicals detected at the OU 3 sites were within the 10^{-4} to 10^{-6} risk range, were less than $10^{-6,}$ or an exposure route to the chemical did not exist. As a result of the findings in the RI report finalized in February 1996, a no action proposed plan was released for public review in April 1996. A no action ROD was signed by the Army, Hawaii DOH, and the EPA in September (by both DOH and Army) and November (by EPA).

At four former UST sites, remedial actions were taken in FY00. The POL contaminants at these three sites were excavated and run through a thermal desorption unit on site. At three of the four sites, all contaminants were removed. At one site next to Bldg 3010 (SCHBR-106), all contamination was not removed due to physical constraints. The contamination had migrated under the building. The follow-on RI was determined the extent of contamination. The risk assessment determined that the remaining contaminants poses no risk to human health or the environment.

PROPOSED PLAN

No further remedial action is planned for this site.

OU4 - SCHBR-12 (PAGE 1 OF 2)
FORMER LANDFILL (FFA 7)

SITE DESCRIPTION

Operable Unit 4 consists of the former Schofield Barracks Sanitary Landfill (SCHBR-12)(~45 acres). The SB landfill was operated from 1967 to 1981 and is located in an area used as burn site from 1942 until 1967. Quantities and type of waste that were burned are unknown; however, interviews with former site personnel suggest that excess gun powder, paper and building debris may have been burned there. The landfill received waste from various military sub-installations on Oahu, including domestic, construction, medical, and hazardous wastes such as acids, bases, digested sewer sludge, medicines, inorganic compounds, spent pesticide and fluoride containers, and unusable paints.

Landfill operational inadequacies resulted in refuse being dumped over the edge of the landfill, underground fires, leachate production, methane gas production, slope instability, odors, ponding water, and vectors. Analysis of samples collected before landfill closure indicated high turbidity and contaminant, pesticides, or herbicides wee detected.

STATUS

RRSE RATING:
High

CONTAMINANTS:
Metals,TCE, Carbon Tetrachloride, Vinyl Chloride

MEDIA OF CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS, RD, RA

CURRENT IRP PHASE:
LTM

FUTURE IRP PHASE:
LTM

The EPA Field Inspection Team (FIT) Site Inspection Report prepared for the site in 1981 concluded that past hazardous waste disposal at the site was a distinct possibility and that the most immediate environmental threat was from landfill instability and erosion. Climate and geologic conditions allow for the generation and movement of leachate.

The landfill is currently non-operational, having been closed in 1981 and capped with a clay cover in 1982. Two samples of the clay cover were collected in 1983 and tested for permeability; permeability coefficients of 6.0 x 10^{-7} centimeters per second (cm/sec) and 7.0 x 10^{-7} cm/sec were obtained. However, this clay cover currently contains tensional cracks in some areas, and thus is not an impermeable layer.

The PA/SI effort conducted in FY92 included a soil gas survey of the landfill which indicated volatiles contamination including TCE and dichloroethylene (DCE). The PA/SI effort also served as a scoping effort for the RI Phase I field work, culminating in development of workplans I June 1992 which were subsequently approved by EPA in December 1992. RI Phase I field efforts were conducted between March 1993 and January 1994, including soil gas surveys, lysimeter installation and sampling, deep soil sampling and installation of monitoring wells. Results of RI Phase I indicated that the landfill is a continuing source of contamination to the groundwater, but is not the source of the TCE contamination found in the Schofield Barracks supply wells. Further investigations of the landfill, conducted under the FS phase to expedite the project, were limited to collecting data required to design a more effective cap to reduce the impacts and to determine whether hot spot removal is feasible.

OU4 - SCHBR-12 (PAGE 2 OF 2)
FORMER LANDFILL (FFA 7)

SITE DESCRIPTION

The OU 4 FS Report, which was finalized in December 1995, recommends an initial maintenance effort consisting of regrading the cap to its original design, the installation of gas monitoring wells around the landfill perimeter to comply with RCRA requirements, the installation of a passive landfill gas venting system, and cap revegetation. Long-term maintenance of the cover is also recommended in the FS report. A proposed plan was released for public review in April 1996. The ROD was completed and signed by the Army, the State of Hawaii, and EPA Region IX in September 1996, November 1996, and November 1996, respectively.

The repair/maintenance action at the landfill was completed in August 1998. The landfill cap was cleared of Guinea grass and re-graded. Other improvements were in the drainage system and installation of gas wells. Maintenance actions to repair cracks that appeared in the current cap were completed in March 2001. Cracks continue to appear on the landfill and apparent signs of settling are visible. Additional maintenance repairs to the cap are currently underway.

PROPOSED PLAN

Long-term groundwater is being accomplished in coordination with OU 2 LTM and is on-going. Inspections of the cap and drainage system are conducted quarterly as well as monitoring of methane gas generation at the landfill. Herbiciding of Guinea grass and cutting of grass are on-going as part of the long-term maintenance plan. Repairs of the landfill cap (every two to three years) are also part of the long-term maintenance plan. The landfill cover is planned to be regraded during March/April 2004.

Tripler Army Medical Center

TAMC-02
TAMC LANDFILL (SW BORDER)

SITE DESCRIPTION

The Former Landfill (~3.5 acres) is located in the southwestern section of the installation, in close proximity to TAMC-04. The operation of the unlined landfill occurred from 1960 to 1973. The type of waste reportedly received at this landfill was incinerator ash, laboratory wastes, oil/solvent, and items from TAMC and Fort Shafter.

An RI was performed and detected contamination in soil and groundwater. This landfill was capped with a geo-synthetic layer in FY02.

STATUS

RRSE RATING:
HIGH

CONTAMINANTS:
Solid and Medical Waste, POL, Dioxins, Heavy Metals, Pesticides, SVOCs

MEDIA OF CONCERN:
Groundwater, Surface Water, Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS, RD, RAC

CURRENT IRP PHASE:
LTM

FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Continue LTM and include any LTM requirements of TAMC-04 (UST Bldg 125 POL Leak) with this site due to proximity of sites to each other. LTM includes cap maintenance and repair.

TAMC-04
UST BLDG 125 POL LEAK (WSC #18)

SITE DESCRIPTION

Following the removal of a diesel UST at Bldg 125 in the southwest section of the installation, free product and gross contamination of the soil were identified in the excavation pit. An IRA conducted in 1994 resulted in the removal of 3,716 cubic yards of contaminated soil. However, visual evidence of gross contamination, as well as confirmatory sampling, showed the lateral extent of contamination was greater that the excavation limits.

STATUS

RRSE RATING:
LOW
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, IRA
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RD, RAC, LTM

PROPOSED PLAN

An expanded RI is required to determine the source of the contamination. It is suspected that the source of the groundwater contamination may be related to a former motor pool UST which has since been removed. This site may require a remedy, such as a trench and recovery system to extract contamination found in the soil.

TAMC-01
BLDG 114 PESTICIDE UST (WSC #6)

SITE DESCRIPTION

A UST was removed in connection with the USAG-HI, DPW Pesticide Control Shop, Bldg. 114, located in the southwestern section of the installation. The UST was used for the storing residual pesticides. No elevated levels of contamination detected associated with the UST following REM.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Pesticides
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RAC
CURRENT IRP PHASE:
RC - 1994

TAMC-03
BLDG 114 PESTICIDE STORAGE (WSC #7)

SITE DESCRIPTION

USAG-HI, DPW Pesticide control Shop, bldg. 114, located in the southwestern section of the installation. Facility was used for storage of insecticides, organophosphate, carbamate and herbicides ("Round-up"). No elevated levels of contamination detected following RA, NFRAP RC.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Pesticides (Chlordane)
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RAC
CURRENT IRP PHASE:
RC - 1996

TAMC-05
UST @ BLDG 113 (WSC #8)

SITE DESCRIPTION

Two leaking USTs were removed from Bldg 113 in 1992 that stored gasoline and waste oil, respectively. Long-term release actions were initiated in 1994. Soil samples collected at that time did not indicate the presence of contamination at the site. No elevated levels of contamination detected following IRA. The site was closed and RC recommended.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Pesticides
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS, IRA (2)
CURRENT IRP PHASE:
RC - 1995

TAMC-06
OLD TRANSFORMER SUBSTATION

SITE DESCRIPTION

Old transformer substation located approximately one-half mile west of Tripler Hospital proper on Krukowski Road close to the gasoline station. Site Investigation phase showed high levels of PCBs in the soil and on the concrete pad. No elevated levels of contamination detected following REM, NFRAP RC.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RAC
CURRENT IRP PHASE:
RC - 1995

TAMC-07
UST WING B

SITE DESCRIPTION

The site is located on the southern edge of the of what is now the U.S. Army Reserve Center in Fort Shafter Flats. The warehouse structure (T1542) is no longer present at the site. Samples retrieved indicate presence of semi-volatile organic compounds (SVOCs) and metals. SVOCs are components of petroleum fuel products.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

TAMC-11
UST BLDG 145 (AAFES)

SITE DESCRIPTION

A 3,000 gallon gasoline UST was removed from bldg. 145 on the west side of the installation. Following removal, soil samples showed high levels of TPH-gasoline, benzene, benzo(a)pyrene, and ethylbenzene in the soil and groundwater. Subsequent excavation of adjacent active UST showed that contamination originated from the active UST. Contamination was removed under the UST program.

STATUS

RRSE RATING:
HIGH
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RAC
CURRENT IRP PHASE:
RC - 1994

Wheeler Army Airfield

WAAF-20
WHEELER NETWORK SEGMENT CONTROL CENTER

SITE DESCRIPTION

WAAF-20 is located along Airdrome Road near the housing area located on the eastern side of the base. This site was identified in 1998 during an Environmental Baseline Survey conducted for the U.S. Air Force. The site consists of three buildings (Buildings 1320, 1322, and 1324), two antennas, an asphalt parking lot and access road, a pad-mounted transformer, and two diesel ASTs.

Hazardous materials and petroleum products at the site primarily consist of lead acid batteries and diesel fuel. Diesel fuel is stored in the two ASTs: one 550-gallon tank inside Building 1324 and one 1,500-gallon tank located ten feet south of Building 1324. Soil samples collected in association with the outdoor 1,500-gallon tank indicate that diesel has impacted the soils, but at concentrations that do not require a response action. The highest detected value was 190 mg/kg as compared to the State DOH regulatory criteria for total petroleum hydrocarbons as diesel of 5,000 mg/kg.

STATUS

RRSE RATING: Low
CONTAMINANTS: VOCs, SVOCs, Metals, PAH, PCBs
MEDIA OF CONCERN: Soil
COMPLETED IRP PHASE: PA
CURRENT IRP PHASE: RI
FUTURE IRP PHASE: RC

One historic release at the site was reported. In 1994, a leak was discovered on a 500-kVA, pad-mounted transformer within a fenced area adjacent to Building 1324. The transformer contained an estimated 160 gallons of transformer oil containing PCBs at a concentration of 150 mg/kg. A remedial action was executed in 1995 to remove the leaking transformer and associated PCB-contaminated soil and concrete. After removal, soil samples were collected from the bottom of the excavation to verify that all contaminated soil had been removed from the site. A new concrete pad and transformer were installed adjacent to the spill location.

During the baseline survey, several patches of tar-like material were identified along the western portion of the site. Samples were collected from the tar and adjacent soil to determine whether the tar is a potential source of soil contamination. The tar sample was analyzed for VOCs and SVOCs. The VOC analysis indicated that methylene chloride is present in the tar at 0.11 mg/kg, which is well below the residential PRG of 8.5 mg/kg. No SVOCs were detected in the tar sample. However, the analytical results did not meet quality control criteria due to matrix interferences from the tar. The reporting limits of the various analytes were several orders of magnitude above the residential PRGs.

The soil sample was analyzed for TPH, VOCs, and SVOCs. No VOCs or SVOCs were detected. However, the detection limits for the SVOCs exceeded residential PRGs by several orders of magnitude due to matrix interferences. The TPH concentration detected in the adjacent soil was 5,300 mg/kg as oil, which exceeds the state DOH regulatory criteria of 5,000 mg/kg.

PROPOSED PLAN

Complete remedial investigation due to the detection of petroleum contamination in the soil above state DOH regulatory criteria. The investigation should focus on delineating the nature and extent of contamination along the western boundary of the site where patches of waste tar were observed. The State of Hawaii Department of Health has submitted a letter (Dec 2003) to the Army stating that no further actions are required at this site.

WAAF-21
ARCHERY RANGE SITE

SITE DESCRIPTION

This site (formerly Site 19) is located near the southwestern boundary of the installation below the Gulch Runway. The site is adjacent to the small arms firing range formerly used by the Air Force. The site was discovered during clearing of vegetation and grading operations being conducted by the 65th Engineer Battalion. The site was being cleared for use as an archery range. In addition to solid waste debris (telephone poles, scrap metal, 12" transite pipe, bowling pins, and scrap wood, approximately 12 metal drums were uncovered, six of which were partially buried. Three of these drums, whose integrity was compromised, contained unknown free liquid product. All other visible drums were empty/crushed. Suspect approximately additional four drums to be buried in a bermed area (anomalies detected using metal detector). Drum liquid contents were removed and sampled, results are pending. Soils impacted by current release were drummed and sampled, results are also pending. There is no documentation regarding previous investigations or regulatory activities at this site. Construction and labeling of drums appears to be pre-1986 vintage. Drums, debris, and grossly contaminated soils were removed from the site. Lead contamination from the range activities has been detected and is the primary concern on this site. Soil sampling has been completed and report is currently under review.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
VOCs, SVOCs, Metals, Explosives
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA
CURRENT IRP PHASE:
SI
FUTURE IRP PHASE:
RC

PROPOSED PLAN

Based on regulatory comments, finalize the IRA report. This site will be considered RC under ER,A and any further action at this site will be completed under the Military Munitions Response Program (MMRP). DOH will not provide closure at this site until lead contamination is addressed under MMRP.

WAAF-03
200K GAL AVGAS UST (SITE D1)

SITE DESCRIPTION

UST Site D1 is located near an access road off of Airdrome Road. The UST system consisted of a 200,000-gallon concrete and steel tank, a 4" vent line, 6" fill line, and two 6" product lines. The tank was constructed in place. The reinforced concrete tank was lined with steel and the roof was supported with steel I-beams and wide flange columns. The product last stored was AV gas. No records were available pertaining to the installation date and parties involved in the tank's operation. The tank was believed to service the C1 and C2 facilities, which are tank farms.

UST D1 was removed in April 1994. The tank was approximately 14 feet in height and 54 feet in diameter. The structural condition of the tank was good. No corrosion patches or holes were observed in the interior lining. The concrete walls and base were observed to be in good condition. No obviously stained soil or petroleum odor was observed.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, Petroleum Hydrocarbons
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

Nine soil samples were collected from the native soil beneath the tank. Eight of the samples were situated under the floor along the tank walls and one was situated in the center of the tank. The samples were analyzed for TPH-diesel, VOCs, and PAHs. The sample from the tank center showed elevated levels of benzene (0.0693 mg/kg). Due to this result, four additional confirmation samples were collected starting from the tank center and radiating out every 4 feet. The confirmation sampling results did not exceed the DOH screening levels.

One soil sample from the tank center was found to contain benzene at a level that exceeded DOH's screening level. However, additional confirmation samples collected from the tank center and radiating outwards did not indicate a widespread release. Therefore, no additional work is recommended for the former UST site.

WAAF-06
BLDG 105 UST

SITE DESCRIPTION

UST Site 105-1 is located near building 105, which is situated along Santos Dumont Avenue. The UST system consisted of one 500-gallon steel tank, a 1-1/2" vent line, 3/4" direct fill line, and two 3/4" product lines. The product last stored was diesel fuel. No records were available pertaining to the installation date and the parties involved in the tank's operation. The tank was used to service Building 105, a low-rise office building. No records of tank tightness testing were available.

The tank and associated piping were removed on 23 February 1994. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was also no visual evidence of a release to the underlying soil. One soil sample was taken from beneath the tank, and one sample was taken from beneath the associated piping. The samples were analyzed for TPH-diesel, VOCs, and PAHs. Concentrations of benzene, toluene, ethylbenzene, acenaphthene, benzo(a)pyrene, fluoranthene, and napthalene were below DOH's interim recommended clean-up criteria for soil.

Based on the soil sampling analytical results, a clean closure was completed, and no additional work is recommended for this former UST site.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, Petroleum Hydrocarbons
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

WAAF-07
SALVAGE YARD

SITE DESCRIPTION

UST Site 107-1 is located near Building 107, which is located along Wright Avenue. The UST system consisted of one 500-gallon steel tank, a 1-1/2" vent line, 3" direct fill line, and two 3/4" product lines. The product last stored was diesel fuel. No records were available pertaining to the installation date and the parties involved in the tank's operation. The tank was used to service Building 107, a low-rise office building. No records of tank tightness testing were available.

The tank and associated piping were removed on 24 February 1994. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was also no visual evidence of a release to the underlying soil. One soil sample was taken beneath the tank, and one soil sample was taken beneath the piping. The samples were analyzed for TPH-diesel, VOCs, and PAHs. Concentrations of benzene, toluene, ethyl benzene, acenaphthene, benzo(a)pyrene, fluoranthene, and napthalene were below DOH's interim recommended clean-up criteria for soil.

Based on the soil sampling analytical results, a clean closure was completed, and no additional work is recommended for this former UST site.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, PHC
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

WAAF-008
BLDG 108 UST

SITE DESCRIPTION

UST Sites 108-1 and 108-X are situated near Building 108, which is located along Santos Dumont Road. The tanks are located adjacent to each other. Each UST system consisted of a 500-gallon steel tank, a 1" vent line, a 2" remove and fill line, and two ¾" product lines. Both tanks last stored diesel. No records were available pertaining to the installation date and the parties involved in the tanks' operation. The tanks were used to service Building 108, an office building. No records of tank tightness were available.

The tanks and associated piping were removed on 18 February 1994. Visual inspection of UST 108-1 revealed heavy corrosion patches on the bottom of the tank. UST 108-X also had heavy corrosion patches and a hole on the bottom of the tank. One soil sample was collected from the native soil beneath UST 108-1 at the suspected stained soil where heavy corrosion patches were observed. One soil sample was collected under UST 108-X where the hole was discovered. The samples were analyzed for TPH-diesel, VOCs, and PAHs. Concentrations of benzene, toluene, ethylbenzene, acenaphthene, benzo(a)pyrene, fluoranthene, and napthalene were below DOH's interim recommended clean-up criteria for soil.

Based on the soil sampling analytical results, a clean closure was completed, and no additional work is recommended for this former UST site.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, PHCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

WAAF-09
BLDG 111 UST

SITE DESCRIPTION

UST Site 111-1 is located near Building 111, which is located along Santa Dumont Avenue. The UST system consisted of one 500-gallon steel underground storage tank, one oil water separator, and the associated piping and ancillary equipment. No records were available pertaining to the installation date and the parties involved in the tank's operation. The tank was used to service Building 111, an aircraft hangar building. No records of tank tightness testing were available.

The tank was removed on 15 February 1994. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was no visual evidence of a release to the underlying soil. One soil sample was taken from beneath the tank. The sample was analyzed for TPH-diesel, VOCs, and PAHs. Concentrations of benzene, toluene, ethyl benzene, acenaphthene, benzo(a)pyrene, fluoranthene, and napthalene were below DOH's interim recommended clean-up criteria for soil.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, PHCs, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

The concrete oil water separator was removed on 12 May 1997. During, the removal, the oil water separator was found to contain a blackish liquid. The liquid and sludge was pumped out, and the separator was cleaned. The wastewater was stored in three 55-gallon drums and the sludge was stored in two 55-gallon drums. The wastewater and sludge were tested and disposed of locally at an approved disposal facility. One soil sample was collected from beneath the separator. The sample was analyzed for TRPH, volatile organic compounds, and total lead. The sample results did not exceed DOH Tier 1 standards. Two other samples were collected from the former UST location and beneath the oil water separator. The two samples were analyzed for total metals. The sample results did not exceed DOH Tier 1 standards.

Since the original soil sampling for the tank removal was conducted for potential diesel fuel contamination and not waste oil contamination, three additional soil borings were drilled at the site on 26 April 1999. The borings were located: at the former UST location, at the former oil water separator location, and at the former piping location. One soil sample was collected from each boring at a depth of 11 feet. The samples were analyzed for VOCs, HVOCs, TRPH as waste oil, PCBs, and PAHs. The soil sample results were below the detectable limits of the analytical methods and did not exceed any of the DOH Tier 1 standards.

Recommendations for future response: Based on the soil sampling analytical results, a clean closure was completed, and no additional work is recommended for this former UST site.

WAAF-10
BLDG 114 UST

SITE DESCRIPTION

UST Site is located near Building 114, which is located along a restricted aircraft parking area. The UST system consisted of a 500-gallon steel tank, a 3/4" vent pipe, 1" product line, and a 3" direct fill line. The product last stored was diesel fuel. No records were available pertaining to the installation date and the parties involved in the tank's operation. The tank was used to service Building 114, which is presently in use as an aircraft maintenance facility. No records of tank tightness testing were available.

The tank and associated piping were removed on 14 February 1994. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was also no visual evidence of a release to the underlying soil. One soil sample was taken from beneath the tank. The sample was analyzed for TPH-diesel, VOCs, and PAHs. Concentrations of benzene, toluene, ethylbenzene, acenaphthene, benzo(a)pyrene, fluoranthene, and napthalene were below DOH's interim recommended clean-up criteria for soil.

Based on the soil sampling analytical results, a clean closure was completed, and no additional work is recommended for this former UST site.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, PHCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

WAAF-11
BLDG 208 USTS

SITE DESCRIPTION

UST Site 208-1 is located off Airdrome Road. The UST was buried approximately 100 feet south of Airdrome Road, under a concrete pad. An associated aboveground pump at the site was encased in a concrete box. The UST system consisted of a 10,000-gallon fiberglass tank, a 4" fill line, a 1-1/2" vent pipe, a 4" product line, and the aboveground pump. The UST was an integral part of a fuel/dispensing system located at the end of an active runway, but no records were available to determine information on the history of substances stored or when the tank was installed. Other associated USTs in the immediate area stored and dispensed JP4. No records of tank tightness testing were available.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, PHCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

The tank and associated piping was removed on 7 April 1994. When the tank and associated piping was exposed, it was discovered to be a catchment tank for waste generated by a fuel filtering system at the site. The filters were clearly marked for use in the JP4 filtering/dispensing system. Subsequent soil analyses were done in accordance with the analytical parameters for JP4. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was also no visual evidence of a release to the underlying soil. Three soil samples were collected from beneath the tank and one soil sample was collected from beneath the associated piping under the base slab of the filtering system after its demolition. The samples were analyzed for TPH-diesel, VOCs, and PAHs. The only constituent that was detected was toluene. Toluene was detected at a maximum concentration of 0.0028 mg/kg, which is well below the DOH action level.

UST Site 208-2 is located off of Airdrome Road approximately 250 feet south of Building 235. The UST system consisted of one 550-gallon steel tank, a 4" suction riser line, and 3" drain line servicing a fuel filtering system. The tank was used as a catchment tank to store filtered waste from the JP4 fuel tanks located nearby. No records pertaining to the installation date and any previous tank tightness testing were available.

The tank and associated piping were removed on 15 March 1994. The associated fuel filtering/dispensing system was also demolished and removed. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was also no visual evidence of a release to the underlying soil. One soil sample was collected from beneath the tank and one soil sample was collected from beneath the associated piping under the base slab of the filtering system after its demolition. The samples were analyzed for TPH-diesel, VOCs and PAHs. The only constituent detected was toluene. Toluene was detected in the soil sample beneath the piping at a concentration of 0.0151 mg/kg. This concentration is below the DOH action level.

Based on the soil sampling analytical results, a clean closure was completed, and no additional work is recommended for these former UST sites.

WAAF-12
BLDG 235 UST

SITE DESCRIPTION

This site is located at Building 235 on Airdrome Road. The site is approximately 7,500 sf and consists of a closed service station which includes the USTs, Bldg 235, the concrete apron, and the grassy area east of the building. The adjacent land is used for heavy industrial purposes (shops, hangars, and runway operations) and some office space.

This site was identified as an AOC during a PA/SI conducted in 1996. There were two fuel pumps standing during the PA site reconnaissance; one was labeled diesel and the other labeled unleaded regular. Only one filler pipe labeled #2 diesel fuel was located. The filler pipe had a broken lock and a strong diesel odor was emanating from it. The exact dates of operation for the service station are unknown. The tanks were originally installed at the site in 1943.

The two tanks were removed in 1996 as part of the WAAF UST program.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, Metals, PHCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC - 1994

WAAF-13
BLDG 800 USTS

SITE DESCRIPTION

UST Site 800-X is located near Building 800, which is situated along Whiteman Road. The UST system consisted of a 1,500-gallon steel tank, a 1-1/2" vent pipe, a remote fill line, and two 1-1/2" product lines. The product last stored was gasoline. No records were available pertaining to the installation date and the parties involved in the tank's operation. The tank was used to service Building 800, the control tower building. No records of tank tightness testing were available.

The tank and associated piping were removed on 22 February 1994. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was also no visual evidence of a release to the underlying soil. One soil sample was taken from beneath the tank, and three soil samples were taken from beneath the associated piping. The samples were analyzed for TPH-gasoline and VOCs. Concentrations of benzene, toluene, and ethyl benzene were below DOH's interim recommended clean-up criteria for soil.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PHCs, PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

UST Site 800-3 is located near Building 800, which is situated along Whiteman Road. The UST system consisted of one 5,000-gallon steel tank, a 1-1/2" vent line, and 3" direct fill line. The product last stored was diesel fuel. No records were available pertaining to the installation date and the parties involved in the tank's operation. The tank was used to service Building 800, the control tower building. No records of tank tightness testing were available.

The tank and associated piping were removed on 2 February 1994. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was also no visual evidence of a release to the underlying soil. Two soil samples were taken from beneath the tank. The samples were analyzed for TPH-diesel, VOCs, and PAHs. The soil sample results were below the detectable limits of the analytical methods and did not exceed any of the DOH Tier 1 standards.

Based on the soil sampling analytical results, a clean closure was completed, and no additional work is recommended for this former UST site.

WAAF-14
BLDG 1004 USTS

SITE DESCRIPTION

UST Sites 1004-1, 1004-2, 1004-3, and 1004-4 are located near Building 1004, a generator building. Each tank system consisted of a 5,000-gallon steel tank, a 2" vent line, a 2" direct fill/return pipe, two 2" product lines, and a 2" capped line. At this UST site, the product piping and return line for each tank ran to a common valve box adjacent to Building 1004. The tanks were located adjacent to one another. All four tanks were used to store diesel. No records were available pertaining to the installation date and parties involved in the tank's operation.

Tanks 1004-2, 3, and 4 were removed on 10 and 11 February 1994. Visual inspection of the tanks revealed they were intact, with no corrosion patches or holes visible. There was also no visual evidence of a release to the underlying soil. An electrical switchgear box was situated above UST 1004-1, which necessitated an in place closure. Two soil samples were taken from beneath each tank. One soil sample was taken beneath the associated piping system. The samples were analyzed for TPH-diesel, VOCs, and PAHs. Three soil samples, one beneath UST 1004-1, one beneath UST 1004-3, and one beneath the associated piping, exceeded the DOH screening level for benzo(a)pyrene. Therefore, three additional confirmation samples were collected from beneath UST 1004-1, UST 1004-3 and the associated piping system. The additional sample results did not exceed DOH screening levels.

Although three soil samples contained levels of benzo(a)pyrene that exceeded DOH's screening level, additional confirmation samples collected from the immediate area did not indicate a widespread release. Therefore, it is concluded that no additional work is recommended for the former UST site.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, PHCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

WAAF-17
UST BLDG 1112

SITE DESCRIPTION

UST Site 1112-1 is located in the central portion of WAAF near Building 1112. Building 1112 is located along Airdrome Road. The former UST system consisted of a 6,000-gallon fiberglass underground storage tank, 2" vent line, 4" direct and remote fill line, and 2" product line. The product last stored in the tank was MOGAS. The tank was installed in 1985 and used by the 45th Support Group of WAAF. The tank was used to service Building 1112, a fuel dispenser station. The last recorded tank tightness testing on April 1991 indicated that the tank passed.

The tank and associated piping were removed on 25 May 1994. The structural condition of the tank was good. No corrosion patches or holes were observed on the exterior of the tank. There was also no visual evidence of a release to the underlying soil.

STATUS

RRSE RATING: NE
CONTAMINANTS:
VOCs, PAHs, PHCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RAC
CURRENT IRP PHASE:
RC - 1994

Three soil samples were taken from beneath the tank. The samples were analyzed for TPH-gasoline, volatile organic compounds, and lead. Concentrations of benzene, toluene, ethyl benzene, and total lead were below DOH's interim recommended clean-up criteria for soil.

Based on the soil sampling analytical results, a clean closure was completed, and no additional work is recommended for this former UST site.

Fort Shafter Schedule

The schedule of IRP work completed to date and planned through completion of all restoration work at Fort Shafter has been detailed.

PAST MILESTONES

PA/SI (13 sites by POD) Initiated	Jun 92
PA/SI (13 sites by POD) Completed	Jan 94
PA (16 sites by AEHA) Initiated	Nov 93
PA (16 sites by AEHA) Completed	Jun 94
REM (FTSHF-31) Initiated	Oct 93
REM (FTSHF-31) Completed	Dec 94
REM (FTSHF-33 thru 39, 41, 42, 43) Initiated	Jan 92
REM (FTSHF-33 thru 39, 41, 42, 43) Completed	Dec 94
PA/SI (FTSHF-03, 06, 07, 08, 10, 11, 46, 47, 48, 49, 50) Initiated	Aug 92
RA (FTSHF-15, 32 & 45) Initiated	Oct 92
REM (FTSHF-01 & 23) Initiated	Oct 94
PA/SI (FTSHF-17, 21, 27, & 28) Initiated	Oct 94
PA/SI (FTSHF-17, 21 & 28) Completed	Dec 95
PA/SI (FTSHF-03, 06, 07, 08, 10, 11, 46, 47, 48, 49, 50) Complete	Jun 96
RA (FTSHF-15, 32 & 45) Completed	Jun 96
SI (FTSHF-27) Completed	Apr 97
RA (FTSHF-42) Initiated	Sep 97
REM (FTSHF-01 & 23) Completed	Mar 98
RA (FTSHF-42) Complete	Mar 00

FUTURE MILESTONES

RI/FS (FTSHF-46 - 52) Initiate	Mar 02
RI/FS (FTSHF-46 - 52) Complete	Jul 03
RD (FTSHF-46 - 52) Initiate	Jul 03
RD (FTSHF-46 - 52) Complete	Sep 03
RA (FTSHF-46, 48, 51, 52) Initiate	Sep 03
RA (FTSHF-46, 48, 51, 52) Complete	Dec 04
RA (FTSHF-47, 49, 50,) Initiate	Jan 05
RA (FTSHF-47, 49, 50) Complete	Sep 05
LTM (FTSHF-46, 48, 51, 52) Initiate	Jan 05
LTM (FTSHF-47, 49, 50) Initiate	Sep 05
LTM (FTSHF-46, 48, 51, 52) Complete	Jan 09
LTM (FTSHF-47, 49, 50) Complete	Sep 09

Fort Shafter IAP Schedule

(Based on current constained funding)

Current Phase **Future Phase**

		FY05	FY06	FY07	FY08	FY09	FY10	FY11+
FTSHF-46	RI/FS							
	RD							
	RA							
	RAO							
	LTM							
FTSHF-47	RI/FS							
	RD							
	RA							
	LTO							
	LTM							
FTSHF-48	RI/FS							
	RD							
	RA							
	LTO							
	LTM							
FTSHF-49	RI/FS							
	RD							
	RA							
	LTO							
	LTM							
FTSHF-50	RI/FS							
	RD							
	RA							
	LTO							
	LTM							
FTSHF-51	RI/FS							
	RD							
	RA							
	LTO							
	LTM							
FTSHF-52	RI/FS							
	RD							
	RA							
	LTO							
	LTM							

Kunia M.R. Schedule

PAST MILESTONES

REM Initiated (FSK-01)	Jun 93
REM Completed (FSK-01)	Jan 95
PA/SI Initiated (FSK-02, -03)	Mar 93
PA/SI Completed (FSK-02, -03)	May 95
IRA Initiated (FSK-01)	Jun 94
IRA - (FSK-01) Complete	Jul 96
RI Initiated (FSK-01)	Aug 98
RI Completed (FSK-01)	Jul 01
RA Initiated (FSK-01)	Apr 02

FUTURE MILESTONES

RA Complete (FSK-01)	2005
LTM initiate (FSK-01)	2005

Kunia Military Reservation IAP Schedule

(Based on current constained funding)

Current Phase **Future Phase**

		FY05	FY06	FY07	FY08	FY09	FY10	FY11+
FSK-01	RI/FS							
	RD							
	RA							
	LTO							
	LTM							

Schofield Barracks Schedule

The Schofield Barracks IR program was initiated in July 1991 with the award of a task to scope the RI/FS effort for the site. Under this task, Preliminary Assessment/Site Investigation of Schofield Barracks, work plans were developed to guide the conduct of the RI and FS phases of the program.

PAST MILESTONES

IRP Phase	Completion Date
Initial Installation Assessment	May 84
Removal Action - Water Supply Treatment System	Sep 86
NPL Listing	Sep 90
IRP Initiation	Jul 91
PA/SI (OU 1, OU 2, & OU 4)	May 92
PA/SI (OU 3)	Aug 93
Construction Completion	Sep 98
OU 1	
RI	Jun 94
PA/SI of Wheeler (TCE Source Search)	Dec 94
Proposed Plan (NFRAP)	Jun 94
ROD (NFRAP)	Sep 94 (signed)
OU 2	
RI Phase I	Aug 94
RI Phase II	Aug 95
FS	May 96
Proposed Plan	July 96
ROD	Feb 97 (signed)
OU 3	
RI	Mar 96
Proposed Plan	Apr 96
ROD	Nov 96 (signed)
OU 4	
RI Phase I	Aug 94
RI Phase II	Aug 95
FS	Mar 96
Proposed Plan	Apr 96
ROD	Nov 96 (signed)
Maintenance Action	Aug 98

FUTURE MILESTONES

IRP Phase	Completion Date
OU 2	
LTM	2028
RD/RA	TBD*
* Wellhead treatment approach; schedule tied to monitoring.	
OU 4	
LTO	2028
LTM	2028
Projected Completion Date of IRP excluding LTM:	**Jul 98**

Schofield Barracks IAP SCHEDULE

(Based on current constained funding)

Current Phase **Future Phase**

		FY05	FY06	FY07	FY08	FY09	FY10	FY11+
SCHBR-12	RI/FS							
	RD							
	RA							
	LTO							
	LTM							
SCHBR-19	RI/FS							
	RD							
	RA							
	LTO							
	LTM							

Tripler Army M.C. Schedule

The schedule of IRP work completed to date and planned through completion of all restoration work at Fort Shafter has been detailed.

PAST MILESTONES

PA (AEHA) Initiated	Nov 93
PA (AEHA) Completed	Jun 94
REM/RA (TAMC-01 & 03) Initiated	Oct 92
REM/RA (TAMC-01 & 03) Completed	Dec 94
RA (TAMC-06) Initiated	Oct 92
RA (TAMC-06) Completed	Dec 94
REM (TAMC-04, 05, & 07) Initiated	Oct 93
REM (TAMC-04, 05, & 07) Completed	Dec 94
PA/SI (TAMC-08, 09, & 10) Initiated	Oct 94
PA (TAMC-08, 09, & 10) Completed	Dec 95
RI/FS (TAMC-02) Initiated	Oct 92
RI/FS (TAMC-02) Completed	Feb 99
RD/RA (TAMC-02) Initiate	Jul 98
RI (TAMC-04) Initiate	Sep 99
RD (TAMC-02) Complete	Aug 00

FUTURE MILESTONES

RA (TAMC-02) Complete	May 02
RI (TAMC-04) Complete	2005
LTM* (TAMC-02) Initiate	Jun 02
LTM (TAMC-02) Complete	Oct 31

*TAMC-02 LTM to include requirements of TAMC-04 LTM due to proximity of sites

RA TAMC-02	2009

Tripler Army Medical Center IAP SCHEDULE

(Based on current constained funding)

Current Phase **Future Phase**

		FY05	FY06	FY07	FY08	FY09	FY10	FY11+
TAMC-02	RI/FS							
	RD							
	RA							
	LTO							
	LTM							
TAMC-04	RI/FS							
	RD							
	RA							
	LTO							
	LTM							

Wheeler A.A.F. Schedule

PAST MILESTONES

In August 1999, a Memorandum of Agreement was signed by the Department of the Air Force and the Department of the Army to exchange the environmental responsibilities of the Wheeler Army Airfield and Fort Kamehameha.

SI (WAAF-21 Archery Range Dump Site) initated	Sep 02
RI (WAAF-20 Network Segment Control Center initiated	Sep 02
IRA (WAAF-20 Network Segment Control Center)	Sep 02
RI (WAAF-20) Complete	Dec 03
RD (WAAF-20) Initiate	Dec 03
SI (WAAF-21) Complete	Dec 03

FUTURE MILESTONES

RD (WAAF-20) Complete	Jul 04
RA (WAAF-20) Initiate	Oct 05
RA (WAAF-20) Complete	Sep 06

Wheeler Army Airfield IAP SCHEDULE

(Based on current constrained funding)

Current Phase **Future Phase**

		FY05	FY06	FY07	FY08	FY09	FY10	FY11+
WAAF-20	PA/SI							
	RI/FS							
	RD							
	RA							
	LTM							
WAAF-21	PA/SI							
	LTM							

Fort Shafter Remediation Activities

There were 15 sites (FTSHF-01, -15, -20, -23, -32 through -39, -41, -43, -45) Removal/Remedial Actions that require no further remedial action. Current Removal/Interim Remedial/Remedial Actions have been identified at 1 site (FTSHF-42), future Removal/Interim Remedial/Remedial Actions at 7 sites (FTSHF-46, -47, -48, -49, -50, -51, and -52). FTSHF-33 through 39, 41, 42 and 43 were expedited UST removal actions involving the "Investigation-by-Excavation" approach. Confirmatory soil samples were retrieved during the tank removal. No prior investigation was conducted. Limits of any contamination were defined by field sampling methods followed by confirmatory lab analysis.

Past REM/ RA/ IRA

FTSHF-33, a 1,000-gallon UST at the U.S. Army Reserve Center, Fort Shafter Flats was removed. Soil and groundwater contamination was found. HHRA determined low risk to human health and the environment. NFRAP RC.

FTSHF -20, -34 thru -39, -41, 42: Removal of abandoned/inactive USTs

FTSHF-20, One 550-gallon UST at bldg 535. NFRAP RC

FTSHF-34, One 550-gallon UST at bldg. 310. NFRAP RC.

FTSHF-35, Two 1,000-gallon USTs at bldg. 320. NFRAP RC.

FTSHF-36, Two 280-gallon USTs at bldg. 430. NFRAP RC.

FTSHF-37, One 550-gallon UST at bldg. 508. NFRAP RC.

FTSHF-38, Two 1,000-gallon USTs at bldg. 507. NFRAP RC.

FTSHF-39, One 550-gallon UST at bldg. 520. NFRAP RC

FTSHF-41, One 550-gallon UST at bldg. 1500. NFRAP RC.

FTSHF-42, One 1,000-gallon UST at bldg. 1528. Tank removed. Further action required.

FTSHF-43, One 280-gallon UST at bldg. 1535. NFRAP RC.

FTSHF-15, bldg. 420, maintenance area. Contaminated soil was thermally treated on Oahu. FY95 and FY96.

FTSHF-32, remediation of contaminated soil from various USTs.

FTSHF-45, bldg. 1605, lift station UST. Contaminated soil was thermally treated on Oahu. FY95 and FY96. Currently reviewing the draft report.
FTSHF-01, bldg. 225, former pesticide storage and mixing area. Removal of contaminated soil via permitted landfill.

FTSHF-23, bldg. 1507, Paint and Plating facility. Removal of contaminated soil via permitted landfill.

FTSHF-42, bldg. 1528, Cleanup of soil related to a leaking UST.

Fort Shafter Remediation Activities

Current REM/IRA/RA

NONE

Future REM/ RA/ IRA

FTSHF-46, Former Fueling Station, Bldg 1537. Cleanup soil contamination of TCE, gasoline, volatile organics and semi volatile organics.

FTSHF-47, Former Fueling Station, Bldg 1593. Cleanup groundwater contamination of TCE which has been identified in quantities above MCLs. FY05

FTSHF-48, Former Laundry Facility, Flats. Cleanup groundwater contamination of mercury which has been identified in quantities above PRGs.

FTSHF-49, Former Warehouse, Bldg 45. Cleanup groundwater contamination of TCE which has been identified in quantities above MCLs. FY 05

FTSHF-50, Former Motor Pool Repair Facility, Bldg 1567. Cleanup groundwater contamination of pentachlorophenol which has been identified in quantities above MCLs. FY05

FTSHF-51, Washrack T-1539. Cleanup groundwater contamination related to POL contamination.

FTSHF-52, Former Warehouse T-1542, Cleanup groundwater contamination related to POL contamination.

Kunia M.R. Remediation Activities

Removal of the 305,000 gallon UST (FSK-01) was completed in January 1995. Upon removal of the tank, excavation of grossly contaminated soils (an interim remedial action) was accomplished and is nearing completion.

Current REM/ RA/ IRA

- FSK-01, 305,000 gallon concrete diesel tank, removed, crushed, and thermally treated, Jan 95.

- FSK-01, excavation and thermal treatment of grossly contaminated soil at site of 305,000 gallon concrete tank.

Past REM/ RA/ IRA

- FSK-01, install impervious layer over footprint of plume

Schofield Barracks Remediation Activities

Past REM/ RA/ IRA

-SCHBR-19, Water Supply Treatment System installed in September 1986 to remove TCE via air stripping; not DERA funded.
-Removal Action - LUST Soil Remediation, 1992.
-Removal Action - UST/Soils Removals, 1993.
-UST/Soil Removals, 1994.
-Inactive/Abandoned UST Removals, $65K, FY96 removal of additional tanks not covered under FY93 project.
-LUST Remediation, FY96 Remediation of contaminated soil resulting from leaking USTs (USTs have been removed).
-UST/Soil Remediation at OU 3 Site E.
-OU 2 -Groundwater Monitoring, FY97 LTM.
-OU 3 -4 UST sites, FY98 RA.
-OU 4 -Initial Cap Maintenance Effort, FY97 RA ; Annual Maintenance.
-OU 4 – Initial Cap Maintenance Effort, FY98 RA.
-OU 2 & 4 - Groundwater Monitoring, FY98 LTM, Annual Monitoring.
-OU 2 – Long-Term Groundwater Operations FY98, Annual treatment facility operations.
-OU 4 – Long-Term Gas Monitoring, FY98 LTM, Annual Monitoring.
-OU 4 – Long-Term Landfill Maintenance FY98 LTO, Annual Maintenance.
-OU 3 - 4 UST sites, FY98 RA.
-OU 2 & 4 – Groundwater Monitoring, LTM , Annual Monitoring.
-OU 2 – Long-Term Groundwater Operations FY99 LTO, Annual treatment facility operations.
-OU 4 – Long-Term Gas Monitoring, FY99 LTM, Annual Monitoring.
-OU 4 – Long-Term Landfill Maintenance FY99 LTO, Annual Maintenance.
-OU 3 – 4 UST sites, FY99 RA.
-OU 2 & 4 – Long-Term Groundwater Monitoring FY 00 LTM, Annual monitoring.
-OU 2 – Long-Term Groundwater Operations, FY00 LTO, Annual treatment facility operations.
-OU 4 – Long-Term Gas Monitoring, FY00 LTM, Annual monitoring.
-OU 4 – Long-Term Landfill Maintenance FY00 LTO, Annual Maintenance.
-OU4 – Landfill Cap Maintenance (Crack Repairs) FY00 LTM.
-OU 2 & 4 – Long-Term Groundwater Monitoring FY 01 LTM, Annual monitoring.
-OU 2 – Long-Term Groundwater Operations, FY01 LTO, Annual treatment facility operations.
-OU 4 – Long-Term Gas Monitoring, FY01 LTM, Annual monitoring.
-OU 4 – Long-Term Landfill Maintenance FY00 LTM, Annual Maintenance.
-OU4 – Landfill Cap Maintenance (Crack Repairs) FY01 LTM.

Current REM/IRA/RA

-OU 2 & 4 – Long-Term Groundwater Monitoring FY 02 LTM, Annual monitoring.
-OU 2 – Long-Term Groundwater Operations, FY02 LTM, Annual treatment facility operations.
-OU 4 – Long-Term Gas Monitoring, FY02 LTM, Annual monitoring.
-OU 4 – Long-Term Landfill Maintenance FY02 LTM, Annual Maintenance.

Future REM/ RA/ IRA

- OU 2: LTM of downgradient wells FY03-27; Treatment of groundwater at wells identified as being impacted by Schofield Barracks contamination (funding requirement TBD; depends on number/size of wells to be treated and when they become contaminated)

- OU 4 (SCHBR-12): Annual Maintenance FY03-27

Tripler Army M.C. Remediation Activities

There were 9 (TAMC-01, 03, 05 through 10, 12) AEDB-R sites that require no further remedial action. There are no current Removal/Interim Remedial/ Remedial Action identified.

Past REM/ RA/ IRA

TAMC-01, 03, & 05, Removal and remediation of pesticide contaminated soil.
TAMC-06, Removal and remediation of PCB contaminated soil.
TAMC-11 & 07, Removal inactive/abandoned USTs.
TAMC-04, Removal POL contaminated soil.

Current REM/ RA/ IRA

TAMC-02 Remedial Action at former landfill

Wheeler A.A.F. Remediation Activities

Past REM/ RA/ IRA

WAAF-21 Archery Range Dump Site, IRA, Removal of drums, POL contaminated soils, funded FY02.

Current REM/ RA/ IRA

NONE

Fort Shafter Community Involvement

The area surrounding Fort Shafter is made up of numerous and varying groups. There are primarily urban neighborhoods in the near vicinity but much of the land around the sub-installation is used for agriculture. Wheeler Army Airfield (WAAF) is also between the two portions of Fort Shafter. The Air Force was the custodian of the property prior to the Army assuming control in 1991. The Air Force remains the proponent for restoration activities at WAAF. As such, a diverse group of members made up the TRC. Twenty representatives from landowners, businesses, neighborhood boards, and elected officials were invited to each meeting. The chairpersons of both the Wahiawa and Mililani neighborhood boards were members as well as the elected officials of the two towns. The University of Hawaii at Manoa, Water Resources Research Center also took part in the TRC.

Efforts taken to determine interest

The installation has held numerous community-based activities in attempts to gain public input into the investigative process. The installation realized that public input and acceptance would be valuable in ascertaining a practical and effective remedy to the contamination problem. A fact sheet was distributed to the mailing list in the Community Relations Plan at the inception of the program at Fort Shafter. This fact sheet was updated periodically to provide current information and status of the investigation. This was done three times subsequent to the initial publication. At the end of the fact sheet there was a mail in sheet if the reader wanted more information on the investigation.

Proposed Plans for each of the operable units were also distributed to the mailing list with the same “request for more information” sheet affixed to the end of the brochure.

Held public availability sessions in September 1994 in both Schofield and Wahiawa. Booth was set up to publicize RABs.

Results

There were no responses to the direct mailing of fact sheets.

There were two written requests for more information in response to direct mailings of proposed plans. There were two phone calls in response to the proposed plans.

No responses were received as a result of the public availability sessions.

Conclusions

Based upon the results of community meetings and mailouts, plus the low attendance at TRC meetings and public meetings, both the public availability sessions and the meetings held in connection with presenting the proposed plans, the installation has determined that insufficient public interest exists to sustain a RAB.

At this point all Records of Decisions are in place and concurred on by the regulatory community. There are limited opportunities for input into decisions since the decisions are already in place. However, the installation plans to hold meetings to discuss the results of the long-term monitoring of the groundwater. In addition to the regulatory community and the Honolulu Board of Water Supply, the installation intends to invite all previous invitees to the TRC as well as those parties who showed interest in becoming involved in a RAB.

Kunia M.R. Community Involvement

RESTORATION ADVISORY BOARD (RAB) STATUS

Previous efforts at forming a RAB at adjacent Schofield Barracks have not proven to show sufficient interest in formation of a RAB at Kunia Military Reservation.

Schofield Barracks Community Involvement

The area surrounding Schofield Barracks is made up of numerous and varying groups. There are primarily urban neighborhoods in the near vicinity but much of the land around the sub-installation is used for agriculture. Wheeler Army Airfield (WAAF) is also between the two portions of Schofield Barracks. The Air Force was the custodian of the property prior to the Army assuming control in 1991. The Air Force remains the proponent for restoration activities at WAAF. As such, a diverse group of members made up the TRC. Twenty representatives from landowners, businesses, neighborhood boards, and elected officials were invited to each meeting. The chairpersons of both the Wahiawa and Mililani neighborhood boards were members as well as the elected officials of the two towns. The University of Hawaii at Manoa, Water Resources Research Center also took part in the TRC.

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Tripler Army M.C. Community Involvement

RESTORATION ADVISORY BOARD (RAB) STATUS

Efforts Taken to Determine Interest
A public meeting was held in November 2000 in relationship to the landfill cap project. Flyers were posted hand delivered to neighborhood residences, announcements were made in the local television stations and newspapers.

Results
Only two people from the public attended.

Conclusions
To date very little public interest has been shown in the program. This along with the results from earlier Aliamanu meetings also points to a general lack of interest.

Follow-up Procedures
The installation will continue to gauge public interest through individual meetings on projects.

Wheeler A.A.F. Community Involvement

RESTORATION ADVISORY BOARD (RAB) STATUS

See efforts made to establish RAB under Schofield Barracks Community Involvement.